

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

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Shall We Safeguard Our Future?

"National Preparedness" is of necessity the dominant question of the hour.

He who does not recognize the supreme importance of this has failed to grasp the meaning of the fearful struggle in Europe, and failed to read all history aright.

The most enthusiastic peace advocate of the past can well afford now to be the most enthusiastic advocate of "National Preparedness" in order to preserve peace.

The man whose house is heaped with rich treasures, and who makes no effort to safeguard his loved ones and his riches, though he knows that thieves and robbers and murderers surround him, would not be more unwise than would this nation, whose wealth could be taxed to pay Europe's war losses; whose wholly unprotected condition offers no safeguard against the amazing developments in army and navy strength and equipment which have been created in Europe since war began, and whose 100,000,000 people would be absolutely helpless against an invading enemy, if we failed to safeguard our future.

If we do not recognize this situation we shall continue to live in a fool's paradise until, like the fools that we would be under such circumstances, we would be driven out of paradise.

Looked at from the narrow point of view of material development, and that is the most unimportant side, "National Preparedness" must of necessity, if it is to be made effective, bring about an enormous expansion in industrial activities, in the creation of iron and steel and chemical industries, in the South and the Southwest and the Central West, in order to be away from possible attack from our northern, southern, eastern or western boundaries. When this development has been made the country will be safer than at present, and it cannot by any human possibility be made safe without a wonderful expansion in the metallurgical and chemical interests of the South and Southwest.

In the doing of this the business leaders of the country and the Government itself would be carrying out a scientific plan for the rounding out of national life and creating a broader national spirit than can possibly exist under present conditions.

BALTIMORE, DECEMBER 9, 1915



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MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

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PRESIDENT WILSON'S MESSAGE.

WHILE differing from some of the views on economic questions expressed by President Wilson in his message, the MANUFACTURERS RECORD is not disposed just now to pick flaws in these details, which can be threshed out in later discussions, but, on the contrary, to give unstinted praise to his broad national views and to his call to the nation to recognize its world position and to act accordingly on the supreme question of the hour.

President Wilson's bitter denunciation of hyphenated Americans, whose activities have, as he says, been the gravest threats against our national peace and safety, is worthy of the man, worthy of his position and worthy of the nation.

It is time that the people of this country who are not craven in heart, who are not upholders of the cold-blooded murder of women and children and of the awful, unspeakable horrors which have been brought upon Europe, should give voice, as President Wilson has done in his just but bitter arraignment of these unworthy citizens. Rightly does he suggest that every self-possessed and thoughtful patriotic American must feel deep humiliation and scorn when he thinks of such people and of their efforts to injure this country.

Well may the nation, in the language of President Wilson, blush to admit that there are such citizens in this land!

Never before has a President of the United States been called upon to utter such sentiments, for never before has the country been disgraced by such acts as have been committed by these hyphenated Americans. In the position he has taken in this matter every decent American citizen, whatever may be his views in regard to the economic questions discussed by President Wilson, should stand by him wholeheartedly and enthusiastically.

President Wilson's advocacy of an enlarged army and navy should command the immediate support of the entire country, without regard to party affiliations.

Every man, whatever may be his views on economic questions, or whether he be for free trade or protection, who seeks for political reasons to hamper and restrict the President in this call to the nation to prepare an army and navy in order to safe-

guard its interests will be a disgrace to the party he represents. It is true that President Wilson scarcely goes far enough; it is true that many who are studying this situation believe in more adequate preparedness than he has outlined, but the start that he has made is one which should awaken the interest of the nation in a question of supreme importance.

AMERICAN RAILWAY SERVICE CHEAPEST AND BEST.

CRITICISM of our railroads is abating, but now and then notes of condemnation concerning them are heard from the lips of political demagogues or are read from the pens of carping folk who seem to be never satisfied unless they are uttering harsh words about somebody or something. Thoughtful men of an honest disposition of mind have long realized—and have acted in accord with the realization—that the antagonism manifested toward railroads in this country had gone too far; that it was unjust to them and also contrary to the best interests of the public. Consequently came the abatement of criticism.

But the great masses of people do not yet know many of the reasons for reaching these conclusions because the details of railroad statistics are not available to them; neither have they other information or the facilities to make extensive comparisons with railroad conditions elsewhere in the world, and without these the attainment of accurate judgment is difficult. Therefore, the recent publication by the Bureau of Railway Economics at Washington of a bulletin which presents and compares railroad statistics of the United States and other countries is particularly welcome, for it puts within sight of all such enlightening data as clearly shows how much the railroads of this country exceed those of other lands in economy of capitalization and in cheapness of rates.

If there is anything that the anti-railroad stump-speaker enjoys roaring about it is the question of railroad capitalization. He seizes upon those few instances of railroad stock watering (which are the exceptions that prove the rule) and uses them as a text to declaim against all railroads, notwithstanding that the great bulk of our rail transportation companies are not only honestly capitalized, but are capitalized in a ratio which bears testimony in itself to their integrity. And this is proved by the official data promulgated in the bulletin. Here are the figures:

TOTAL CAPITALIZATION PER MILE OF RAILROAD.

| | |
|--|----------|
| United States..... | \$63,535 |
| United Kingdom of Great Britain and Ireland..... | 277,147 |
| Belgium..... | 216,143 |
| Russia..... | 149,814 |
| France..... | 148,436 |
| Switzerland..... | 122,010 |
| Austria..... | 121,327 |
| Germany..... | 116,365 |

In Japan, Roumania and Spain the railroad capitalization per mile also exceeds the United States figures by more than \$25,000.

Now, look at the other side of the picture, the matter of earnings. This data covers the year 1912,

which is the latest for which comparative statistics are available, and is as follows:

OPERATING REVENUE PER MILE OF LINE.

| | |
|---------------------|----------|
| United States..... | \$11,482 |
| United Kingdom..... | 26,689 |
| Germany..... | 22,026 |
| France..... | 14,521 |
| Belgium..... | 22,665 |
| Austria..... | 16,049 |
| Italy..... | 13,868 |

Not only was the revenue per mile much less in this country, but the operating expenses here per mile were only \$7968, or less than one-half of that on the railroads of many other lands. Net operating revenue was also much lower here, being \$3514 per mile, while in the United Kingdom it was \$9826, in Germany \$7166 and in France \$5437. It was likewise much greater in Belgium, Russia, Austria and Spain than in this country.

These statistics reveal to everybody what students of economics have long known, that the enjoyment of railroad facilities here costs less than in almost every other country over the entire world. There is, in fact, but one country (India) where rail freight rates are lower than in the United States, and this is because the cost of labor in India is trifling. In our own country the average receipts of railroads per ton per mile is about 60 per cent. of the same receipts of railroads in the principal countries of Europe, and, besides, the average revenue here from freight per mile is only \$7962, while in Belgium it is more than \$14,000, and in Germany, and also in the United Kingdom, over \$13,000. Receipts per mile from passengers are also much less in the United States, being \$2704, as compared with the United Kingdom over \$9000, Germany over \$6000, France and Italy over \$4000 each. It also costs less per passenger to transport people in Europe than it does here, because they are carried in less commodious cars and employees are paid much lower wages.

Excepting in Western Australia, where there is a total of only 2500 miles of railroad, there is also no country where the average compensation per year per employe is so high as it is in the United States. This average is as follows:

| | |
|--------------------|-------|
| United States..... | \$729 |
| Great Britain..... | 333 |
| Germany..... | 494 |
| Austria..... | 329 |
| Italy..... | 354 |
| Russia..... | 211 |

Moreover, our railroads paid during 1912 to their employes an amount equal to 70 per cent. of their total operating expenses, or to 40 per cent. of their total operating revenues. Thus the gross amount paid to employes was \$1,252,347,697, and this huge sum all went back into the channels of domestic industry and commerce. The total of operating expenses was \$1,972,415,776.

Considering all these facts, is it not clear that common justice and fair play demand that all hasty and sweeping denunciations of our railroads ought to be promptly condemned by everyone who hears them, and that, too, immediately. If this were done, demagogues would soon cease their carping criticisms, which are commonly addressed to hearers not posted as to the facts, and who are too often disposed to accept as gospel the unwarranted utterances of stump-speakers. It would be a fine thing for all if their auditors would put the muzzle upon such unscrupulous politicians, whose rantings only delay the coming of a period when our railroads will obtain just and adequate treatment, and, having it, will be enabled to fulfil their plans to meet the business conditions which are daily demanding greater and greater expansion of all transportation facilities.

A FEW FACTS FOR CAREFUL CONSIDERATION.

THE Charlotte News returns to the charge against "Preparedness," and says, among other things:

Where is the navy which Admiral Fletcher, the best posted naval expert in America, says is better than that of Germany, which means that it is the second largest in the world? We had always understood that our battle-ships were equipped with guns capable of throwing shells as far as the largest.

In this statement the News again shows that it has not kept up with the situation. Neither our ships nor our forts are equipped with guns which can carry shells the distance of those of the most modern European ships. In this respect we are woefully deficient and badly outclassed.

Will the News remember that in the last sixteen months conditions have wonderfully changed, and that what might have been true, or supposedly true, in July, 1914, is not necessarily, by any manner of means, true today? The News expresses its amazement at the statement that we could not assemble at any point in the United States, within thirty days' time, an army of 25,000 trained soldiers. But if the News will get from any competent army officer a statement of the case it will get some additional light on this situation. Unfortunately, army officers are not permitted at present to express their views as to our situation. However, Hon. James M. Beck, Assistant Attorney-General of the United States between 1900 and 1903, in an address in Baltimore last Wednesday, made the following statements, which we commend to the careful consideration of the News and of others not familiar with this condition:

Fourteen years ago or thereabouts the then Secretary of War appointed a General Staff of our army, and this General Staff devoted 10 years to the problem which I must discuss, say, in an hour. His staff asked the opinion of nearly every officer of the army, high or low, who would give an opinion, and when these opinions were all gathered together, this board of men, who had given their lifetime to a study of the problem, formulated a report in the year 1912, which until the present time has made almost no impression upon the American people.

Now, this report showed, among other things, that it was possible for at least two or three of the great nations of the world, within 10 to 30 days, to put an army ranging from 100,000 to 200,000 men upon the shores of our country, and in that they were confirmed by the ablest military authorities of all the world, namely, the German General Staff, who, in their unceasing study of military problems before the war, had, not because of any aggressive intention to this country, but simply studying the great problems of war as they presented themselves to those most experienced experts, reached the conclusion, as a purely academic problem—let us hope—that they could put, within 10 days, anywhere from 100,000 to 200,000 men upon the shores of our country.

That being so, our General Staff considered what we had to oppose such an invasion, and, leaving aside wholly the question of what our navy—either the third or fourth in the world—might possibly do, and if, of course, by chance of war, it should be divided between the Atlantic and Pacific, obviously its strength would be divided in half; but, leaving that aside, they found these facts: That the army of the United States consisted, at most, of about 90,000 men. Of these 90,000 about 18,000 were necessarily detailed to our coast fortifications, and, after eliminating the further portion—and a very substantial portion of the whole—that were necessary to guard our far-flung colonial possessions—for on our possessions, as those of England, the sun never sets—there was left, as a mobile army to defend 21,000 miles of sea-coast, just 30,000 men—30,000 men to oppose a possible invasion, an initial invasion of anywhere from 100,000 to 200,000 men.

Now, of course, we had supposed that prior to the critical period through which we are now passing the transportation of such huge armies was a practical impossibility, and the acquiescence of the American people, until within the last 12 months, to the defenseless state of America was, I suppose, in part, predicated upon the belief that it was impossible, across so long and wide a stretch of water, to transport safely an army of at least 100,000 men. But when I remind you that in the Dardanelles the English Army has lost in casualties 100,000 men, and that, therefore, giving a very large proportion of the casualties to the survivors of 1 to 3, which would be an abnormal proportion, it seems reasonably clear from inference that England must have transported to the Dardanelles, to make the attack upon Gallipoli, at least 300,000 men within a very short space of time; and, of course, we know that over 200,000 were taken by England in the Boer War a very much longer journey than from Europe to America when the attack was made on the South African Republic.

Now, I do not want to ignore the fact that we have a

State militia estimated to be about 120,000 men, of whom this General Staff, after very careful inquiry, estimated about 86,000 to be effective, reasonably effective soldiers. But even adding the mobilization of the National Guard over a vast extent of territory, from the Lakes to the Gulf and from the Atlantic to the Pacific, adding them to the Federal 30,000 mobile troops, we would yet have a painfully inadequate force.

Now, there are three alternatives to this question. The first is to make no preparation at all; the second is to make an inadequate preparation, and the third is to make an adequate preparation. For the last 100 years our course has been the second one, to always have an inadequate preparation, and I do not know whether you will agree with me, but I am quite confident that, as between the first two courses of making no preparation at all or making an inadequate preparation, the former is infinitely preferable.

In other words, if we are going to rely in a spirit of optimistic idealism upon the fact that we have no aggressive purpose toward any nation, and upon the other fact, which is not so clear, that at some time in the future no nation will ever have any aggressive purpose with reference to us, or if they do, we will simply carry in our right hand gentle peace to silence unopposed victory. As the poet has said, there is at least something to commend that plan as compared with the plan of inadequate defense, for at least we sacrifice no one.

But if, with our inadequate defense today, we should be suddenly plunged into a war with one or possibly with two powers, for us to send out against any one or two of the greatest powers an inferior navy, or if our navy be conquered, to oppose, with an inadequate force of even the brave men of our standing army or of our militia, a greatly excessive force, is, in these times, when war is a matter of chemistry and of mechanics and of organization, just purely wanton murder.

In fact, I am not at all sure if we made no opposition at all, if we had no army and had no navy at all, we welcome the invader with the open arms of friendship and trust to his magnanimity and generosity, fanciful as the dream is, that the terms of peace would not be less humiliating to us than if we sent an unequal army and an unequal navy against overpowering resources of nations which have made the preparation for war a matter of life and death.

You cannot improvise an army, you cannot prepare after the war begins any more than if an epidemic were raging in Baltimore you could improvise a medical staff or, if another conflagration would visit your beautiful city, you could improvise a fire department after the fire had started. That is a little late, and so it is a little late according to modern ideas of an army and according to the mechanical perfection of the science of war to improvise an army after the declaration of war.

SOUL-SOLD MEN WORKING UNDER FALSE COLORS.

THE New York Herald claims that the German Government, with a view to carrying on its pro-German campaign in this country, began, immediately after the war, to employ men, mainly Americans, to keep up an agitation wherever possible in favor of Germany. According to the Herald, 8000 of these men were paid \$17.50 a week for their pro-German utterances; 2000 received \$20.00 a week, and some got \$25.00; others up to \$100 a week. These men were to stand in front of bulletin boards and in public meetings, and wherever they could speak out in favor of Germany. Not one of these curbstone orators was a German. They were all Americans, selected with great care by German agents for the work intended to suppress the expression of public opinion in favor of the Allies. They were not, of course, known as in any way in the employ of Germany. They were supposed to be independent American citizens.

In the assignment of these speakers, special attention was paid to seaport cities and munition-making centers. New York had the largest number, 476 having been on the payroll when the recent sudden abandonment of the propaganda was announced. Chicago came next with 250, and in San Francisco 175 were stationed. Philadelphia had 150, and Boston and New Orleans 100 each; 75 men were assigned to regenerate Baltimore, while 50 each spread the propaganda in St. Paul, Minneapolis and Denver.

According to the Herald, from which these statements are taken, these secret agents of the German Government sold themselves, without regard to whether at heart they favored Germany or not, merely for the matter of employment, and so the land has been filled with the active work of these 11,000 soul-sold men.

According to the Herald, \$15,000,000 has been spent

in the last 15 months in this particular part of Germany's campaign in this country. The scheme now has been abandoned, and the Herald says:

There is not a little dissatisfaction among the men who have been talking twice a day for 15 months at the short notice they were given of the termination of their service. Not all of them have converted themselves to the German idea, and many of them are eager to find someone who will pay them to talk for the Allies. Their quest has been unsuccessful, however.

Referring to a specific case, the Herald says:

A man who has upheld the German argument for \$17.50 a week on the lower East Side for more than a year said yesterday he had sought more congenial work, but could find nothing that paid so well for so little labor. In describing how he became a pro-German speaker and some of the unpleasant features of the work, he said:

"I was out of work in a New England city when I was approached in a casual way by an affable man who suspected I was unemployed, just as a detective might entertain the idea that I was a burglar. He asked me if I wanted easy work for sure money, and then told me what it was. He said that even if I were pro-Ally the consideration should overcome my scruples, and I agreed with him and took the job.

"I got my cue by watching one of the organizers work. It took only a jiffy to learn the trick of edging into a crowd where two or more men were expostulating on the war and of saying, 'I'm an American citizen and a neutral, but I have an opinion.' That or some similar remark always got me a hearing, and then I handed out the German stuff hot from the card, fortified by a lot of ancient history I had hurriedly spruced up on.

"We always worked in pairs, and if the crowd was very large, there would be perhaps half a dozen of us. I might be arguing with a man who was pressing me hard with facts and figures. One of my running mates would see I was in a pinch, and, stalking to my rescue, he would divert my opponent's attention by shouting that he would fluster me. Then he would ply me with easy questions, and I would put it all over him and make him look like a monkey. He would feign anger and want to fight and the crowd would applaud me, but I would never give the fellow who had me going a chance to butt in again.

"We always had one or more stool pigeons handy who asked questions that injured the Allies' cause, but I have had stiff questions propounded to me many times, and have had to parry hard and often to save myself from disgrace, even with the aid of confederates. I am thankful to have escaped with my life."

With such a statement as this from the Herald, the public will be able to understand a good deal of the pro-German talk that has been going on throughout the land and to appraise it and the people responsible for it at its true value.

A QUESTION FOR EASTERN CAPITALISTS AND THE GOVERNMENT TO STUDY.

IF this country were at war it would of necessity have to look very largely to the South for the men needed for its armies, for in this section is found less intermixture of outside or foreign blood than anywhere else in America.

With nearly one-third of the nation's population, the South has a much larger percentage of native-born people than any other part of the country, and it is to these native-born people that the nation in its hour of peril would have to turn.

Is it not incumbent upon the nation, therefore, to recognize the resources in raw materials for the creation of the industries upon which successful war alone could be waged, as it would in time of war have to look to the raw material of the South in manhood to be trained and developed for its armies?

How long will the financial forces of the East and the great iron and steel leaders of the country permit such a condition as now exists to continue, when they are staking everything that they have and everything the country has upon iron and steel supplies which might be instantaneously lost in time of war?

A HARD-LUCK STORY FROM TEXAS!

[Rusk County (Tex.) News.]

MANY of our East Texas farmers will not make over 500 or 600 bushels of potatoes to the acre, the crop having been checked by a drouth in July.

FACTS VS. THEORIES IN NATIONAL AFFAIRS.

DISCUSSING the question as to whether the United States needs to make preparation against the possibility of war, the News and Courier of Charleston, S. C., makes the following amazing statement:

We need not fear England, because it is beyond the power of England to attack us effectively. We hold Canada as a hostage, as a permanent assurance that England will never levy war upon the United States. In such a war she could do no more to us than bombard a few coast cities, while we could take from her for our own all that vast colonial empire of hers that, sparsely settled and undefended by fortresses, stretches for thousands of miles along our northern frontier.

We trust that this country may never be at war with Great Britain. May Heaven forbid that these two great Anglo-Saxon nations, representing the highest so far attained in human civilization, allied by every possible tie, should ever, under any condition, be engaged in war.

Nevertheless, the statement made by the News and Courier is worth republishing merely to indicate how little such an intelligent paper as the News and Courier has of our possible relations to Canada.

The suggestion that "we hold Canada as a hostage, as a permanent assurance that England will never levy war upon the United States," is an old standby argument that has completely lost all its force.

Even Henry Ford, who seems to have been able to sound the depths of vacuity and inanity, could scarcely now use such a statement as a reason against preparedness.

An army and a navy would then be useless, for neither would be able to wage war without munitions or without iron and steel. Through the two 800 canals, one on the Canadian side and one on the American side, there passed from the opening of the canal season in the spring to the end of October 40,638,000 tons of iron ore. Destroy the canal and 90 per cent. of the iron industry and nearly 95 per cent. of the steel industry of the United States would collapse, for the stock of ore carried by the furnaces and at Lake ports is only large enough to keep them running for a few months during the winter season when the canal is closed by ice.

Let the Lake Superior ore district be captured, which could at any time be done with the troops always available in Canada without waiting for a single regiment from England, and the entire country would be hopelessly defeated before it had time to fire a gun.

Not until the people of the United States wake up to this situation will they realize fully the supreme national importance of developing broadly the iron and steel and other material interests of the South and Southwest.

In the making of explosives nitrates are absolutely essential.

We get our entire supply from Chile, thousands of miles away. We carry no important surplus stock. Let the Chilean supply be cut off by a foreign fleet and we would be wholly without explosives. Germany has saved itself from this situation by having developed to an enormous extent the making of nitrates from the air.

How long will this nation continue to ignore this situation, just as it has ignored its dependence for iron and steel upon the Lake Superior district?

The entire munition-making business of the nation and almost the entire shipbuilding interests are in a narrow strip of country along the Atlantic seaboard from Boston to the capes of the Chesapeake. In this 300 or 400-mile stretch, taking the extreme northern and southern limit in both cases, and with a limited width running only a few miles from the coast into the interior, there are produced practically all of the guns and powder turned out in the United States, and nearly all of the merchant marine and navy ships constructed in this country.

A navy a little stronger than ours could without difficulty capture this entire territory and lay

the nation under any tribute that it cared to demand, because the 90,000,000 or more people living in the rest of the country would have neither guns nor powder nor shells with which to fight. They would not have the facilities for making these things, and they could not create the industries with which to produce them.

Let us consider for a moment the possibility of Germany winning in this war—and may Heaven forbid the destruction of civilization and human liberty by such a disaster! If this should be the result, however, Germany, in its eager quest of world domination of iron and steel, could control the entire Lake Superior iron-ore business and thus destroy the iron and steel business of the United States before we had even suspected that Germany was plotting war against us. It has its own vast spy system in this country and it has many reservists scattered through the land. It was only a few months ago when the Governor of New York captured in a German hall, which was raided, fifty or more German-pattern Mauser rifles.

If Germany should win, she could strike us instantaneously through Canada and then land within a few months more trained soldiers than even, under the best conditions, we could possibly train and equip in a year and under such conditions as Germany would impose upon us we would have no chance of raising a big army or of training soldiers, or of equipping them if we had them.

Will the News and Courier take a second view of its statement, and seriously consider these facts? For they are facts, and no man can possibly question them when once he has studied the matter.

Our Unpreparedness Covers Every Field.

LOUIS A. FREEDMAN, Manager Technology Sales Co., Inc., New York City.

Our "Unpreparedness" is not only military, it is industrial, social, covers every field. For a full century our problems and interests have been domestic, or at most continental. The short-lived war we had with Spain in 1898 brought us into conflict with a trans-oceanic nation, but that was only a slight episode. Military men still remember the ridiculous chaos, the haphazard disorganized blundering that characterized so much of the conduct of this war on our part; others have forgotten it.

As a nation we have not yet grasped our international position. We are still well satisfied with ourselves, and feel secure in the confidence in our "splendid isolation." The political affairs of other countries do not concern us; we do not feel any responsibilities toward them. Last year has meant a sudden awakening to some of those who had been singing peaceful lullabies. There has been a sharp realization that there may be national burglars, national pirates, national assassins, as well as individual burglars, pirates and assassins. There has been a faint recognition that international morality should be fought for even where this or that particular nation may not be directly injured. It is now dawning upon us that in the same way as society lays down rules of conduct and punishes the individuals defying its laws, so also must nations lay down international rules of conduct and combine together to punish law-defying nations.

Such a combination has been formed in Europe, but we, relying on this "splendid isolation," have been standing aloof from it. A campaign of national preparedness must include a campaign of awakening that will put us into the ranks, not alone of law-abiding, but also of law-protecting nations. We must prepare immediately.

We are not merely 100,000,000 people, snugly tucked away in a continent 3000 miles removed in either direction from danger; we are one of the great world nations with great moral responsibilities to other nations with whom we are more or less closely bound, and we are as vulnerable and as liable to attack as any of our fellow-nations. We have been immensely favored by good fortune; to continue so to be favored we must deserve what we have and must prepare ourselves to vindicate our right to national existence even as the nations in Europe are now engaged in a death struggle in the vindication of this same right.

Believes in Bond Issues to Provide for Preparedness.

JAMES W. BASS, Manager the Shirley Duplex Sifter Co., Waco, Tex.

I beg to acknowledge receipt of your pamphlet representing different editorials in several editions on national preparedness, and I have read same with a great deal of interest and personal gratification. I feel that the entire country will realize, in a remarkably short time, what they owe you in your efforts to render our common country a great and lasting good, which is of the utmost importance right at this time.

It is indeed an unfortunate situation that all our munition and steel plants are so unfortunately situated, and I feel that for the good of this country the munition plants should be established in the interior. I was very much pleased to see that Anniston, Ala., was to have a munition plant located on a substantial basis. There is no question but what this country is at the present time in a very dangerous attitude as to our munition and steel plants. In the event of an invasion by a foreign enemy I believe it possible that our munition plants could be captured by the enemy and we would be in a position very similar to that of Belgium today.

I think the country at large should wake up and use every effort to have their Congressmen and Senators to take some active steps in this matter. I don't see how it would be hard to convince any practical business man to see the necessity of this move. Our Congressmen and Senators are in a position to know what is liable to happen if conditions are not changed.

I do not think this expense should be met by an internal revenue tax. I think it would be better to have bonds issued and let the future generation assist in paying the cost, whatever it would be, for the maintenance of the necessary governmental munition plants. The internal revenue tax appears to me to be too much of a direct taxation and one that would be antagonized by a great body of our citizenship.

I hope you will continue to keep up the fight to the end that some action may be taken to give this country the necessary relief prayed for in your several editorials.

Development of Industries, Rivers and Hydro-Electric Power Essential to National Preparedness.

J. R. CASE, President, Ruddells (Ark.) White River Development Association.

I am in receipt of your literature on National Preparedness by Richard H. Edmonds. I enjoyed reading the pamphlet very much.

It is our opinion that one of the most essential steps in carrying out the National Preparedness campaign is the full development of our internal waterways by locking and damming where necessary, and by developing power at these various sites. Same to be used in the manufacture of nitrogen and for power purposes.

The object of our association is to do all we can to keep before the minds of the people the fact that in White River we have the greatest source of undeveloped wealth in our section. We will gladly join in urging Congress to enact such laws as will eventually bring about a full and complete improvement of our great internal water system. This will enable capital to locate its factories far enough from the seacoast to make it practically impossible for the enemy to destroy them in time of war.

Our delegates who will be sent to the National Rivers and Harbors Congress will gladly do what they can to help forward this movement.

How Many Others Want "National Preparedness" in Pamphlet Form.

W. L. CLAFFEY, Secretary Oak Flooring Manufacturers' Association, 1348 Conway Building, Chicago.

Attached please find \$1 for 33 pamphlets as reprinted from the MANUFACTURERS RECORD of October 28, 1915, "National Preparedness an Unrealizable Dream Under Existing Iron and Steel Conditions."

"Eye Opener" in Our National Preparedness Campaign.

A. L. ROWE, Editor Memphis Herald.

We have kept up with your editorials on National Preparedness. The first mention you made of the condition of things was "an eye opener." Little had the people thought of such a thing, yet their attention need only to be called to it, and there it is.

You have struck the keynote, and as our nation is aroused to the importance of "National Preparedness," and will take hold with a vim, as we hope when Congress meets, your "eye opener" is the first consideration.

We are sorry to see opposition in our own ranks on the subject, but we hope partisan feeling and party loyalty will be cast aside to the extent that where Democrats do not agree with you that Republicans will come to the support of the measure that it may be pushed to consummation in a hurry.

I also want to say a good word in behalf of the MANUFACTURERS RECORD. It is a grand publication. It should be in the home of every true Southerner. I say home, for the reason that the business man should have the time to read it over carefully, and he doesn't have it in his office. Your publication covers every phase of news that is important to the progressive Southerner, and for that reason every progressive Southerner should help you along in the good work you are doing.

I note what you say in regard to the Nashville, Chattanooga & St. Louis Railroad. It is one of our most progressive Southern roads, and Congress can rest assured that what it does in behalf of the country in this section the Nashville, Chattanooga & St. Louis will be up and doing in keeping apace with this important national movement.

Military Training of All Young Men Suggested for National Protection.

W. W. HURST, 1611 American Trust Building, Birmingham, Ala.

Every fair-minded individual in the country must recognize sooner or late the fact that the United States must take drastic action to maintain the principles of which the Statue of Liberty is significant. Well have you said that "a fat goose wobbling around and rolling in its very fatness, surrounded by starving wolves, would be as safe as would our country in its present condition of unpreparedness if attacked by any great world power."

Modern war-lions are actuated in their savagery by greed, avarice and cupidity. In order to be immune from them we must be "armed to the teeth." But let us take into consideration the fact that in order to get our citizens to "arm to the teeth" a more lasting appeal than that offered by recruiting stations of the army and navy at present must be made. Speaking from a young man's standpoint, I think I can safely say that the average young man is indifferent to the appeal made by the army and navy, as he can see in such a life only hard work and not much of an attractive nature. To my mind an excellent move on the part of employers of the country would be to put away the supreme idea of securing gain from the labor of their employees and urge upon the men of eligible age the absolute necessity of joining the army or navy in order to insure the impregnability of the nation. "Let the women do the work" and let us shoulder the rifle and learn how to protect them and our homes in the event of an invasion.

I am heartily in favor of seeing every man between the ages of 18 and 35 years of age, capable of bearing arms, trained and fully equipped for carrying on war for the protection of our country. This could be brought about in a few years and not involve militarism. Now is the proper time to begin the campaign of preparation. Let the Government and the employers of the nation co-operate to this end. A great many of the employers could improve their physique by joining training camps and staying in the woods awhile. We can "kill two birds with one stone" by becoming soldiers.

"MAKE READY."

TO intelligent men everywhere the MANUFACTURERS RECORD heartily commends for serious consideration the following editorial from The News of Lynchburg, Va., of which Hon. Carter Glass, member of Congress, is editor. The News states the case very clearly as follows:

PREPAREDNESS AGAINST THE TEUTON.

He is, indeed, a superficial observer who does not detect the fact that the sentiment for military preparedness grows the more controlling in the United States in the degree that the tide of Europe's war seems to flow the more favorably for the German cause. And as the American preparedness sentiment takes on added force, the German-American opposition to a preparedness policy becomes the fiercer, the more aggressive, the more insolent. The two conditions involve a significance which, if sensibly considered, in part and very clearly explains why real American people practically en masse sympathize with the Allies. What of America should Germany win? That's the inquiry to which the situation gives rise. If it is to be an unarmed America under such circumstances, it will be easy prey for Germany; and that Germany, as the unchallenged mistress of Europe, would covet power on this continent is generally believed. If so be, then a defenseless United States, or a substantially defenseless United States, would have to assume craven attitude toward the Teuton; it would have to surrender the Monroe doctrine and depend solely upon Teuton mercy to spare its own sovereignty.

Germany, mark you, has reason for intense national animosity toward this country. Her standards of Government war against the standards of the American Government. Her conceptions of human liberty war against those of America. She looks across the sea and sees floating above every capital in North and South America the flag of a republic, while in Berlin autocracy—heavily mailed, imperious, strongly entrenched autocracy—holds undisputed sway. She looks across the seas and observes that millions of people of Teuton blood live in the United States, who love the "Fatherland" far more than they do America, but who live under a Government that is alien to that of the Fatherland, in genius, aspirations, ideals and practices; who abide in a nation where the English speech is the national speech, where the descendants of English-speaking people dominate public affairs. And if victorious in the present war, Germany will bear her children in this land demanding the Germanizing of America; demanding that all who do not sympathize with Teuton aspirations and Teuton standards shall be driven from high places, just as they are demanding now that Woodrow Wilson be driven from the Presidency in the next national election. With this bait, this lure, this incentive, this invitation that Pan-Germanism shall be made a vital fact in the life and affairs of the American people, Germany would be sorely tempted, and Germany would have only to draw her mighty sword and hew and hack her way to the heart of the republic, in order to further satisfy an ominously expanding national craving—were America unprepared. Greet you, this idea, Mr. German Sympathizer, with the leer of incredulity, with amused amazement, with the sneer of skepticism? Do so, if you will, but neither German leer nor sneer can avail to disturb the conviction lodged deep in the American heart that if Germany prevails over the Allies, it may be, it will likely be, "America's turn next."

And so the flat has gone forth from the courts of American public opinion—"Make ready"—make ready against evil times—make ready against the day when a soulless, heartless, monstrously wicked monarchy, drunk with the fumes of victory, may deem it wise to employ its fighting machine as agency for the despoliation and the conquest of America. Hence preparation will be made. Let the German-American throat about its protest until it cracks; let pacifists preach their preachments as they will, there's yet a brave and patient purpose abroad in this land to so strengthen the defenses of the country that the hour will never dawn when Washington will have to cinge to Berlin, when Germany can invade this country without paying for the privilege in price of terrific defeat.

As a matter of truth, were the Allies winning, had they achieved as largely in this war as has Germany, Mr. Bryan's propaganda against preparedness would have an immensely greater following than it now enjoys. For the Allies are really fighting the battle of America when fighting against the supremacy of armament as the enthroned dictator of Christian civilization. They are fighting for the principles of free government. They are fighting for the fundamentals of human liberty. They are fighting against tyranny—against the profane and damnable doctrine which involves the divine right of any man, of any family, of any dynasty, to control and shape the destinies of mankind. And in so far as such a fight is prosecuted in behalf of the principles upon which the American Government is founded; in so far as it is directed in behalf of the principles which constitute the breath, the life, the soul of constitutional government, it is a fight for America, because among the chief beneficiaries of the victory of the Allies, if victory comes to them, America will stand as beneficiary foremost among the nations of the earth.

OVERCROWDED CONDITION OF AMERICAN SHIPYARDS.

[Special Dispatch to Manufacturers Record.]

New York, December 7.

The Harlan & Hollingsworth Co., Wilmington, are the builders of our new ship. The length overall is 435 feet. The beam 53 feet. The approximate cost \$1,000,000. The time of delivery 24 months, which was the best we could do.

The cost and the inability to get the ship constructed on reasonable time will dissuade us from letting additional contract until conditions change.

OCEAN STEAMSHIP CO.

Here is a specific illustration of the overcrowded condition of American shipyards and the impossibility of securing ships in short order. And yet the country has been made to believe that if the National Government were to follow Secretary McAdoo's plan and invest \$50,000,000 or thereabouts in ships, they could be secured over night and the freight congestion of the country relieved.

No one appreciates more fully than does the MANUFACTURERS RECORD the need of additional shipping. We have foreseen this situation since the war began. We have repeatedly urged that the National Government should begin its campaign for building naval vessels in advance of the time when overcrowded shipyards and advancing prices of steel would make it impossible to secure prompt delivery or to secure lower prices.

It has recently been stated that the bids by the navy-yards for the proposed new battleships were very much lower than the bids from private yards. But we have been unable to get from Secretary of the Navy Daniels a reply to the two following questions:

Do the Government shipyards, in making up their bids for building ships, count in the cost interest on the amount of capital invested in the plant, and do they allow a depreciation fund to take care of depreciation and enlargements as is necessary in private plants?

Do the Government shipyards charge against the cost of construction the overhead charges of salaries of officials, which, of course, must be done in all private yards?

It may, of course, be entirely possible at present for these navy-yards to build at a lower cost than private yards, because they have only a limited amount of work on hand. They cannot accept contracts for private buyers, and, therefore, they are in a position to bid at a lower cost. But it is well that the country should not fool itself and imagine that these ships will be built by the Government yards at the exact cost estimated. It is well that the country should understand that private yards must of necessity allow for depreciation of plant and for interest on investment, whereas it is generally understood, and we cannot get from Secretary Daniels any denial of the fact, that no such charges are made in figuring up the cost in Government yards.

POTASH FROM CEMENT MATERIALS.

THE United States Chamber of Commerce has recently sent out a report to the effect that manufacturers of cement are considering the feasibility of saving the potash to be found in the raw materials used in cement making, and that out of this there may possibly come a considerable amount of potash to the benefit of the whole country. The bulletin of the Chamber of Commerce says:

Manufacturers of cement are calling the attention of the fertilizer industry to the fact that many of the raw materials used in making Portland cement contain potash, of which some three pounds are driven off as flue dust, etc., for each barrel of cement manufactured. It is said that 80 per cent. of the potash which is so driven off can be recovered, and that on the basis of the present production of cement in the United States about 135,000 short tons of commercial "muriate" could be obtained each year. Whether or not the manufacturers of fertilizer will find it profitable to turn to this source of supply for potash has not yet been indicated.

THE SOUTH'S COTTON AND ITS RELATION TO THE WORLD'S SUPPLY.

IN a recent issue of Cotton, published in Manchester, appears a brief statement headed "The War and the World's Cotton Supply: New Cotton Fields Within the Empire," in which, quoting from an article by Professor Todd of the University College of Nottingham, some striking statements are made.

It will be noted that Professor Todd emphasizes the importance of developing new cotton fields within the British Empire, and states that this is the "only thing that can be done to prepare the way for meeting this difficulty" of a gradual increase in the world's consumption in excess of the average world's production. The editor of Cotton says:

Mr. John A. Todd, professor of economics at the University College, Nottingham, contributes an important article to the now quarterly number of the Bulletin of the Imperial Institute to be published this month. The question of the world's cotton supply (he points out) has been critical since the beginning of the present century, for although the world's crops have nearly doubled in that period, the extraordinary expansion of the demand has all the time been pressing hard upon the increased supplies. In five out of ten seasons before the war the world's cotton consumption was actually in excess of the world's crops.

Owing to the temporary fall in prices at the beginning of the war, the production of cotton all over the world was very much curtailed. But the world's surplus stocks have now been to a considerable extent worked off, and any revival of normal trade after the war coming upon the reduced supplies of raw material will, it is pointed out, almost certainly produce a severe cotton famine.

Only one thing can be done to prepare the way for meeting this difficulty when it arises, namely, to arouse interest in the development of new cotton fields within the Empire, especially in India, Egypt and the Sudan, where the work of the British Cotton Growing Association and the International Cotton Federation has already shown the way. Russia has shown her wisdom in developing cotton fields in Turkestan and Transcaucasia, which now supply the greater part of her large native consumption of cotton. Germany in her own sphere of influence in the Levant has, it must be admitted, produced large results. That is a point to be remembered in the inevitable rearrangement of the Turkish Empire after the war, as is also the fact that in Mesopotamia we have a potential cotton field, which will probably rival Egypt and the Sudan in quality as well as quantity. But the greatest possibilities for an immediate increase in our cotton supplies lie in India, where great improvements both in quality and quantity have been made in recent years.

This statement comes with very timely interest in view of a remarkable article which we are publishing in this issue from D. B. Osborne of Atlanta, pointing out how the South has been gradually losing out in its percentage of cotton production as compared with the world's output of cotton. The facts presented by Mr. Osborne are illuminating. They demand the most serious study by everyone interested in the welfare of the South. In the elaborate presentation which he makes of cotton growing in different States and under different conditions there is brought out very clearly how the free use of fertilizers not only enlarges the output, but greatly increases the profit per acre on the output.

We have scarcely commenced in this country to adequately understand the proper fertilization of the soil. We are only on the very outskirts of a study of this situation. Much can be done in the South by legumes, the proper rotation of crops and larger attention to livestock. All of these can be made strong factors in advancing the fertility of the South's soil, increasing its productivity and bringing larger profits per acre. But this, however, must be supplemented to a very great extent by commercial fertilizers.

When we have reached the degree of fertilization of our soils maintained in Germany we will then be able to understand something of how a country smaller in area than Texas has been able to support 70,000,000 people and enormously develop its agricultural, industrial, financial and commercial interests.

We have barely scratched the ground in this country in the study of fertilization.

Broadly speaking, it may be said that the fertilizer industry in all of its ramifications, whether it be through commercial fertilizers, legumes, or crop rotation, or livestock raising, is the foundation industry of the world. It is the industry upon which continued and profitable agriculture is alone possible,

and profitable agriculture is absolutely essential not only to business, but to civilization and human existence itself.

The South is in a peculiarly favorable situation for making the most of its opportunity in the development of the fertilizer industry and the use of fertilizers in all their widest ramifications to increase the productivity of its soil.

This section has the phosphate rock, it has pyrites and sulphur for sulphuric acid. It has vast water-powers that should be utilized for the making of nitrates, and it is altogether possible that out of some of the mineral resources in this section will be developed a source of supply of potash, or a potash field may yet be discovered within the borders of the South. We also have the cottonseed, with its great value in the production of fertilizers.

We have made a fair beginning in the development of the fertilizer industry and in understanding the value of bettering our soil conditions, but we have made only a beginning. Mr. Osborne's contribution to the discussion is of more than sectional interest; indeed, of more than national interest, for it is of world-wide importance that the ability of the South to lessen the cost of cotton production and increase its yield as the world's demands may justify should be fully understood.

The nations of Europe are struggling for mastery in the cotton trade. They are seeking to increase production in other regions in order that they may be less dependent upon the South. In a section which has dominated cotton production for so many years, as has the South, it ought to be possible to meet this increasing competition by so lowering the cost of production that we can still maintain our position in the world's cotton industry and take care of the world's ever-expanding demands for cotton, but we are not maintaining our lead at present.

The war has demonstrated how dependent the world and all of its industries are upon cotton. It has been shown that, notwithstanding such a world-cataclysm as now prevails, cotton is ever in demand, its uses are ever broadening, and, despite adverse conditions, consumption steadily goes on.

We invite the careful study of our readers to the facts so strikingly presented in the elaborate discussion of the whole subject by Mr. Osborne.

FAVORABLE PUBLIC SENTIMENT ESSENTIAL TO PRIVATE ENTERPRISE.

THE importance of public sentiment as an encouragement of railroad enterprises and the bringing in of capital and stimulating industrial endeavor in the South is convincingly presented by Mr. John Howe Peyton, president of the Nashville, Chattanooga & St. Louis Railway, in an article prepared by him for a recent issue of the Merchant and Manufacturer of Nashville, Tenn. Mr. Peyton points out that while in the last twenty years the operated main-line mileage in the South has nearly doubled, the increase would have been much greater but for untoward conditions affecting the railroad interests of the country. These deterring influences, mainly political, with resultant prejudicial agitation, obstructive legislation and experimental methods of regulation, proved a serious check to extension and betterment, and by their cumulative hurtful effects inflicted heavy damages to roads already established.

In the material development of the South transportation facilities are of the first importance. The South needs immigration of desirable classes to insure speedy progress in its upbuilding, but the greater number of immigrants who may be induced to come will want land for cultivation that is reasonably accessible to railway transportation. Sections of the South that are without railroads will be seriously retarded in their development until such facilities are provided.

To secure the means necessary for the construction of additional railroads it is necessary to look elsewhere than in the South, as this work requires vastly more capital than the South can itself supply. It is manifestly impossible to compel the investment of capital. Capital is sensitive, calculating and cautious, and its employment in railway construction is

only secured where enterprise is encouraged and public sentiment manifested in sympathy with railroad enterprise. The removal of manifestations of prejudice against capital all over the South would have a marvelously stimulating effect in bringing about all kinds of industrial endeavor.

Mr. Peyton points out that disturbances on account of the European cataclysm can only be regarded as temporary, and that the whole country is too rich and too resourceful to be permanently injured. To the South especially, with all its physical and climatic attractions, the future is particularly bright. With a broadminded public spirit and a hearty co-operation for the general good, the progress of the South will be made with sweeping strides. Prejudicial agitation and legislation and other avoidable hindrances not deterring, he concludes, capital and immigration will flow in and all kinds of industry and enterprise will be promoted.

These are truths well presented and should receive the serious consideration of legislation throughout the South and at the national capital. They should also, and of greater importance, be accepted by the people at large, to whom the average politician turns for the inspiration of his acts.

AN AMERICAN MERCHANT MARINE.

THE Wall Street Journal very cleverly states the situation as to Washington's view of our merchant marine when it says:

It has been said in this place more than once, but the illustration is still pertinent, that the administration at Washington deals with admitted deficiencies in our national life very much as a man who does not understand anything about a steel plate deals with a bulge in it. He takes a heavy hammer to hit the bulge, with the consequence of putting all the rest of the plate out of kilter. If he knew anything about steel plates, he would hit everything but the bulge.

This applies particularly to the idea of instituting an American merchant marine. The new proposal involves a Federal board with jurisdiction over water transportation, somewhat analogous to the jurisdiction of the Interstate Commerce Commission to the railroads, and an initial appropriation of \$50,000,000 for merchant ships, also to be used as naval auxiliaries, these to be built in American shipyards and leased or sold to corporations under contract, under the terms of the act.

There is a material difference from the old bill, which was so creditably defeated in the last session of Congress. It is, in fact, a step forward, but it has one radical defect.

It is like a law without an enabling clause. Nobody disputes the desirability of an American merchant marine. But the economic problem requires that there shall be a basis rate of return upon investment which shall be attractive. If, indeed, there were a reasonable profit in owning ships and operating steamship lines, there would be no merchant marine problem at all.

Because of world-wide competition of the most searching and destructive kind, there is no such security for our investor in steamships. Were his return any way comparable to the 8 or 10 per cent. realized in successful industrial corporations, the position would be simple. If this basis rate for private capital could be raised to 8 or 9 per cent., there would be no lack of American enterprise in the deep-sea trade.

One of the most encouraging suggestions was made by Irving T. Bush, president of the Bush Terminal Co. He suggests what amounts, in fact, to the enabling clause now lacking. If the United States Government guaranteed the payment of bonds, principal and interest, which might be issued to the extent of 60 per cent. or so at the cost of the ships, that issue might be made on not much worse than a 3½ per cent. basis. Supposing this percentage, this addition, its assurance of safety would bring up the present return on ship building and owning to a level which would attract private capital.

The country would have a real merchant marine, the navy a real auxiliary fleet, and there would be no necessity for the expenditure of a dollar by our overdrawn treasury, or, indeed, any expenditure except that involved in the proposed administrative board, which itself is superfluous.

Doing a Great Work Well.

GEO. C. BARTON, President Florida Lakeland Homes Co., Lakeland, Fla.

I received the copies you sent me of the MANUFACTURERS RECORD, as well as the literature on national preparedness, and want to thank you very much for the same. I want also to say that I am heartily in favor of the preparedness advocated by the MANUFACTURERS RECORD, and believe that you are doing a great work well in what you are doing in the cause.

INDUSTRIAL ACTIVITIES IN SOUTHERN CITIES AS REPORTED BY THE CENSUS.

NOTWITHSTANDING the general depression throughout the country after 1907 until within the last few months, there was a very marked increase in manufacturing interests in many of the leading cities of this section. In some cases this increase was largely between 1905 and 1907, before the panic halted general prosperity. But the momentum then under way has continued and many parts of the South have been making some marked gains, notwithstanding the conditions which delayed industrial progress throughout the land.

The census reports now being issued show that in Atlanta the capital invested in factory enterprises was \$36,096,000 in 1914, showing a gain of \$5,218,000, or 16 per cent., over the capital thus employed in 1909.

In the same time, the value of products increased from \$33,038,000 to \$41,373,000, a gain of 25.2 per cent. in this five-year period. A summary for 1900 and 1914 shows the following interesting facts in regard to the industrial interests of Atlanta:

| | 1914. | 1909. | Per cent. of in- crease, 1909-1914.* |
|--|--------------|--------------|---|
| Number of establishments.... | 424 | 483 | -12.2 |
| Persons engaged in manufac- ture | 15,502 | 15,091 | 2.7 |
| Proprietors and firm mem- bers | 270 | 367 | -26.4 |
| Salaried employees..... | 2,643 | 2,422 | 9.1 |
| Wage-earners (average num- ber) | 12,589 | 12,302 | 2.3 |
| Primary horse-power..... | 28,396 | 22,768 | 24.7 |
| Capital | \$36,096,000 | \$30,878,000 | 16.9 |
| Services | 9,375,000 | 8,147,000 | 15.1 |
| Salaries | 3,366,000 | 2,711,000 | 24.2 |
| Wages | 6,009,000 | 5,436,000 | 10.5 |
| Materials | 23,139,000 | 16,418,000 | 40.9 |
| Value of products..... | 41,373,000 | 33,038,000 | 25.2 |
| Value added by manufacture (value of products less cost of materials)..... | 18,234,000 | 16,630,000 | 9.7 |

*A minus sign (-) denotes decrease.

In Parkersburg, W. Va., the capital invested increased 23.7 per cent., having been \$5,473,000 in 1914, as compared with \$4,424,000 in 1909. During the same period, the value of products increased from \$5,498,000 to \$7,143,000, a gain of 29.9 per cent.

The summing up of the situation in Parkersburg is as follows:

| | 1914. | 1909. | Per cent. of in- crease, 1909-1914. |
|---|-------------|-------------|--|
| Number of establishments.... | 85 | 75 | .... |
| Persons engaged in manufac- tures | 2,179 | 1,766 | 23.4 |
| Proprietors and firm mem- bers | 74 | 61 | .... |
| Salaried employees..... | 285 | 210 | 35.7 |
| Wage-earners (average num- ber) | 1,820 | 1,495 | 21.7 |
| Primary horse-power..... | 5,939 | 4,031 | 47.3 |
| Capital | \$5,473,000 | \$4,424,000 | 23.7 |
| Services | 1,367,000 | 988,000 | 38.4 |
| Salaries | 396,000 | 221,000 | 38.5 |
| Wages | 1,061,000 | 767,000 | 38.3 |
| Materials | 4,745,000 | 3,560,000 | 33.3 |
| Value of products..... | 7,143,000 | 5,498,000 | 29.9 |
| Value added by manufacture value of products less cost of materials)..... | 2,398,000 | 1,938,000 | 23.7 |

At Portsmouth, Va., the capital invested in manufactures increased between 1909 and 1914 from \$1,232,000 to \$1,477,000, or at the rate of 19.8 per cent. During the same time the value of products increased from \$1,527,000 to \$1,730,000, or an average of 13.3 per cent.

Vicksburg, Miss., shows a gain of only 1 per cent. in capital invested in manufacturing, the total for 1914 being \$1,249,000, or only \$13,000 over 1909. During the same period there was a decrease in the value of products of 24.9 per cent., the output of the factories of Vicksburg declining from \$2,229,000 to \$1,673,000. There was also a decrease of 14.4 per cent. in the number of persons engaged in manufactures and a large decrease in wages and value of materials used.

Natchez, Miss., makes an even more unfavorable showing, the capital invested in manufacturing falling from \$931,000 in 1909 to \$582,000 in 1914, a decrease of 37.5 per cent. The value of products fell

from \$1,114,000 in 1909 to \$896,000 in 1914, a decrease of 19.6 per cent. In not a single item of the census returns for Natchez was there any increase except in the number of proprietors or firm members, where there was a gain of two.

The report from Hattiesburg shows a small increase in the number of establishments, but a decrease of 8.8 per cent. in the number of employees. The amount of capital increased from \$1,341,000 to \$1,678,000, a gain of 25.1 per cent., but the value of products decreased from \$1,251,000 to \$1,134,000, a falling off of 9.4 per cent.

These three Mississippi cities have evidently felt the full effect of the industrial depression existing from the fall of 1907 to the early part of this year. This depression has been especially severe in lumber, and notwithstanding the increase in population in these communities there has been a very heavy decline in their manufacturing capital and output.

Lake Charles, La., makes a much more favorable showing, though it is largely engaged in lumber operations. The capital invested in manufactures increased from \$1,619,000 in 1909 to \$4,253,000 in 1914, a gain of 162.7 per cent., and the value of products rose from \$2,251,000 in 1909 to \$3,689,000 in 1914, a gain of 63.9 per cent.

Clarksburg, Va., has no comparative statistics for 1909, but the census statement for 1914 shows capital invested in factories in that city as \$948,000 and the value of products \$1,654,000.

PRESIDENT WILSON'S ENCOURAGEMENT TO RAILROADS.

THE closing paragraphs of President Wilson's message to Congress literally teem with hope and encouragement for American railroads. President Wilson points out the necessity of efficiency and co-ordination and development of the railroads to make these things feasible and enable the railroads to accomplish all that is within their power for the nation's advancement.

Referring to this, he says:

The question is not what should we undo. It is whether there is anything else we can do that would supply us with effective means. In the very process of regulation, for bettering the conditions under which the railroads are operated and for making them more useful servants of the country as a whole. It seems to me that it might be the part of wisdom, therefore, before further legislation in this field is attempted, to look at the whole problem of co-ordination and efficiency in the full light of a fresh assessment of circumstances and opinion as a guide to dealing with the several parts of it.

For what we are seeking now, what in my mind is the single thought of this message, is national efficiency and security. We serve a great nation. We should serve it in the spirit of its peculiar genius. It is the genius of common men for self-government, industry, justice, liberty and peace. We should see to it that it lacks no instrument, no facility or vigor of law, to make it sufficient to play its part with energy, safety and assured success. In this we are no partisans, but heralds and prophets of a new age.

This means that President Wilson wants to help the railroads as an essential factor in helping the country. If this can be accomplished and the railroads be brought back into public favor and their securities into universal demand from investors, President Wilson will indeed be the "herald and the prophet of a new age" of American prosperity.

A WISE MOVE FOR OTHERS TO FOLLOW.

IN considering every phase of the question of "National Preparedness" there is a very important field of activity to which the industrial interests of the country can wisely turn their attention, and that is so to plan their work and so to develop and broaden their scope as to have ever in mind the possibility that there might come a day when the Government would need their co-operation. It is with this thought in mind that the Packard Motor Car Co. has been making careful investigations with regard to aircraft motors for military purposes. President Joy in a letter on this subject says:

Yes, it is true that the Packard Company has felt that on account of the elaborate engineering studies which it has accomplished in recent years, which have led it to the Twin Six type of motor, it has become incumbent upon it to develop aircraft motors for military purposes.

I have recently ridden in one of the best American aero-

planes, studying the application of an aeroplane motor to the wants of aircraft. Some of our directors have done considerable aeroplane riding and know the serious needs of the aeroplane art for the very best motors which can possibly be produced.

It is probably a little out of the ordinary for a corporation to go out of its way to produce such military devices as aeroplane motors, because the demand for them will probably be very uncertain. Yet our directors feel that it is a part of the very important duty of manufacturers in this country to mobilize their facilities into such form as that they might be availed of in time of need. We are inclined to feel that our Government is going to find important need of co-operating in the development of what would be the serious wants of our country in time of military trouble in case such an unfortunate condition should come to pass.

I feel that I have understated the proposition as to the views which our directors hold of the duties of manufacturers in this country to work in co-operation with the Government officials so that we may be ready for any contingency. Our company feels that it is its duty to carry on this work towards the condition of military preparedness, which all our directors thoroughly believe is the important necessity of the day.

This is not because we are of a warlike disposition. But three out of seven directors of the Packard Company have served in the United States Army or Navy in time of war, and two others have served long tours of duty in the Michigan State troops. It is not, therefore, unnatural that our company realizes probably to a greater extent than the average manufacturer the very serious distress which would exist in time of trouble for want of equipment being available on sudden call to meet the conditions of war, which always occurs with surprising suddenness. • • • We are engaged in seeking to develop aeroplane motors in the neighborhood of 100 horse-power and 200 horse-power for light scout aeroplanes and heavier duty aeroplanes.

WHICH WOULD YOU CHOOSE?

[Wall Street Journal.]

WHEN it comes to dying, which would a man of courage choose between—the life-in-death of an assured defective scientifically saved in infancy, or a bullet through his head in a muddy trench? If the chief end of man is to glorify God and enjoy Him forever, as a great many of us are old-fashioned enough to believe, the confidence of going to Heaven makes death a minor incident—in fact, what Charles Frohman called it, near his own death, "the most beautiful adventure in life."

This war is fought to establish a principle, and peace will ensue when that has been established. Until it is so established it needs no prophet to say that the British Navy will hold the seas and the upper hand until the salt sea freezes over, and will fight out, if necessary, the principle of government by consent of the governed against imperial autocracy on the ice.

DEMAND FOR LABOR.

THE demand for labor of all kinds in the iron and steel trade is reaching all sections of the country, as indicated by the fact that a half-page advertisement is carried by the Bluefield Daily Telegraph of a subsidiary of the United States Steel Corporation as follows:

WANTED AT ONCE.

FIVE HUNDRED MEN

For Coke Yards, Mines, Shops, etc.

Coke Drawers, Pullers, Machine Men, Tenders, Laborers, Coal Loaders, Miners and Company Men, Blacksmiths, Machinists and Electricians.

UNITED STATES COAL & COKE CO.

Gary, West Virginia.

NEW TEXTILE PUBLICATION.

SAMUEL S. DALE, for the past sixteen years editor of the Textile World Record, and a recognized authority on textile matters, has joined with Edwin B. Pillsbury in founding a new technical journal under the name of Textiles, which is to be published monthly at Boston, the initial number appearing in January, 1916. Mr. Dale will be editor and Mr. Pillsbury business manager.

Textiles will be devoted to all branches of the textile industry—cotton, woolen, worsted and silk, with special attention to the manufacture of knit goods. In carrying out this plan the publication Knit Goods of New York has been consolidated with Textiles.

Can Germany Pay for Goods Ordered in the United States

RAILROAD TERMINALS UNEQUAL TO REQUIREMENTS OF TRAFFIC.

[Special Correspondence Manufacturers Record.]

New York, December 7.

Among the developments of the past week attracting most attention and causing grave consideration in financial quarters was the sensational break in German and Austrian exchange.

Reaching the lowest level since the war began in a series of daily successive declines, while simultaneously English and French exchange advanced to higher figures, Germany's financial and economic situation appeared acute. Keen observers were therefore led to believe her ability to much longer meet the appalling cost of war may seriously be questioned.

Conservative bankers find in the week's divergent movements in foreign exchange a significant omen of the probable final outcome of the war. Cut off more completely than before from the neutral markets of the world because of British undersea activity in the Baltic, Germany finds her difficulties increasing. New York bankers, while obviously declining to be quoted, believe that Germany's financial and economic defeat having already been accomplished, her armies must meet the same fate in the end.

New York funds now stand at such a high premium that every German debtor to the United States must pay from \$120 to \$125 on every \$100 that he owes. This estimate, based upon sight drafts upon Berlin at recent low figures of 78%, show a shrinkage of nearly 25 per cent. in the value of the German mark as against current quotations of English and French exchange of 34 per cent. and 12½ per cent., respectively, below the normal rate of exchange.

Manufacturers and producers of the United States are as greatly concerned with this showing of Germany's financial stress as are the bankers. Their interest lies in the fact that Germany has been seeking to secure on forward orders millions of pounds of copper metal, much iron and steel, thousands of bales of Southern cotton and other American products intended for shipment after the war.

But if Germany's ability to pay its bills is brought into question, and it is just now one of grave issue, because depreciated exchange reflects a depreciated currency and Germany has not been on a gold basis for more than a year, her future purchases for after war deliveries may prove as worthless as "scraps of paper" on which her treaties with other nations are written.

Another fact which has much influence in shaping belief that Germany has almost reached its financial limit is a knowledge among bankers that within the 16 months of war Germany has sold, chiefly through Holland, the great bulk of its holdings of American bonds and securities. Whereas England and France now possess potential instruments of credit here because they still own an aggregate of \$4,000,000,000 of American bonds and stocks, the vaults of Germany are almost empty of these essential collaterals for American dollars.

While the freight situation at the port of New York has not been materially improved, it has not grown decidedly worse. A great railroad blockade impends, but the active measures already under way by railroads, shippers, city and national governments and vessel owners, along with a seasonal lessening of production, may avert the worst phases.

Because of the fact that there is at the moment more activity in the inland producing centers than in the Eastern manufacturing belt, the bulk of export freight is scattered over a wider territory with consequent less trouble directly at New York terminals.

The freight tieup is affecting munitions very little. It is hurting most those who are shipping to private buyers abroad. Their freight is being held back to a greater or less degree until the freight consigned to foreign nations for use in war is handled.

While this has occasioned protests on the part of shippers so inconvenienced they are reminded that both Great Britain and France are furnishing the bottoms to carry the exports destined for their armies. In

addition Great Britain is taking care of official freight for the Russian troops.

This in itself is no slight task, as there are export products for Russia now standing in loaded cars on sidings east of Pittsburgh valued at from \$10,000,000 to \$20,000,000. Most of it must go via Panama, which means transshipment across the zone at an additional cost of nearly \$3 per ton for the railroad haul.

Several of the shipping associations directly affected by the freight embargo are frankly skeptical of the cry that too few ships caused the tieup. They admit that scarcity of bottoms has been one of the foremost factors. But they believe that the railroads should bear the heavier burden of responsibility for existing conditions.

When traffic conditions are normal freight arriving at the terminal yards of the railroads here is distributed to its ultimate destination in the harbor within a week. In the present terminal congestion, however, merchants complain of from three to four weeks' delay in receiving domestic freight after its arrival.

Various committees are now at work, however, and the roads are doing all they can to get foreign freight out of the way, so that the pressing demand for quicker domestic deliveries may be met. Traffic experts from all roads are working harmoniously with all other interests to clear away the congestion.

The city of New York is considering a modern system of docks. Coupled with enlarged railroad terminals, this would make future embargoes unlikely. But the present difficulty must be met with the facilities at hand, and these are limited. For some time New York must remain a costly and inconvenient port for export and import trade.

President W. E. Corey of the new Midvale Steel & Ordnance Co. has exercised the option which his company had held on Cuban lands containing about 300,000,000 tons of iron ore.

The ore is of high iron content, and is particularly adapted to the manufacture of high-grade steel. While not officially confirmed, it is believed that the Midvale company will soon establish a steamship line of its own for service between Cuba and Chesapeake Bay ports and also Philadelphia. On southbound trips the ships will carry export cargoes, returning with iron ore.

As matters now stand, the Midvale company is assured of a plentiful supply of high-grade ore for a long term of years. It is planning widely extended activities.

Interest in the big coal developments now being made in Eastern Kentucky and nearby territory has been further increased by the visit of John D. Rockefeller, Jr., to the West Virginia coal and railroad properties in which he is interested. The Western Maryland Railroad, in which the Rockefellers are heavy holders, handles a large volume of coke and coal from the Eastern Kentucky district.

A \$2,500,000 ELECTRIC PLANT.

New York Capital for Big Station Near Wellsburg, W. Va.

The MANUFACTURERS RECORD is advised that \$2,500,000 will be the initial expenditure for an electric plant to be built near Wellsburg, W. Va., by a company which the American Gas & Electric Co. will organize. This plant will have an initial installation for 60,000 kilowatts, with provision for an ultimate development of 180,000 kilowatts, all the buildings to be of fireproof construction. The Foundation Company of New York is in charge of construction, and Sargeant & Lundy of Chicago are the consulting engineers in charge. Coal for the electric plant will be obtained from the Richland Coal Co., Wheeling, W. Va., which has sold its entire Beech Bottom mine output for 50 years to the owners of the new plant. The location near Wellsburg is on the Ohio River and the Pennsylvania Railroad.

Iron Advances Under Heavy Demand.

Birmingham, Ala., December 4.—[Special.]—There has been another advance of 50 cents per ton in the price of Birmingham iron during the week just closing, putting the important foundry iron producers on basis of \$14.50 per ton at the furnace. Within the past five weeks one of the large producers has sold a total of 100,000 tons, 10,000 tons of which was sold the first week in December. This concern today is producing over 1000 tons of pig-iron per day, and has recently blown in its fifth furnace, whereas three months ago it was only operating two furnaces. Another large producer reports the sale of 2000 tons during the week on basis of \$14.50 per ton at the furnace, with prospect in hand for an additional 5000 tons. Special analysis iron is being sold from \$16.50 to \$17 per ton, with only limited tonnage to offer. In fact, the largest producer of this special iron is not soliciting business from any source, only holding their books open for its regular customers as they come in the market. During the early part of the week one producer notified the trade that all quotations which it had out on \$14 basis should be considered cancelled, and new quotation substituted of \$14.50 for prompt, first and second quarter delivery. Notwithstanding the fact that the Gulf States Steel Co. has its large furnace out for repairs, production continues at the rate of 200,000 tons per month, with no iron being piled on the yards. On the contrary, stacked iron is being shipped from the yard at a rapid rate. By the early part of next year it is estimated that all piled and warrant iron will have been cleared from the yards, and all low-priced orders wiped from the books, bringing the average price for the producers to a mark where there will be a nice profit on all sales. This is a condition that is certainly "coming" to the producer, for he has had to wait a long time for such an opportunity. The price of pig-iron has not yet reached the danger mark on its upward move; in fact, the base price will yet stand a dollar or two more before causing alarm, even during normal times; that is, times of "peace." Following table represents prevailing prices in the district f. o. b. cars at the furnace:

No. 1 foundry and soft, \$15 to \$15.50.
No. 2 foundry and soft, \$14.50 to \$15.
No. 3 foundry, \$14 to \$14.50.
No. 4 foundry, \$13.25 to \$13.75.
Gray forge, \$13 to \$13.50.
Basic, \$14.50 to \$15.
Charcoal, \$22 to \$22.50.

The cast-iron pipe interests report a very satisfactory business, with orders in hand for a steady business some time ahead. One of the most important factors in the pipe business continues to operate its plant on double shift, and is making a special effort to go after in a very effective way the Latin-American business. Prices as quoted are as follows per net ton f. o. b. cars pipe plant: Four-inch, \$23.50; six-inch and upward, \$21.50, with \$1 per ton additional for gaspipe.

The coke market is strong, in sympathy with the pig-iron market, and a number of the idle old beehive ovens are being pressed into commission for furnace demands. Furnace coke is quoted at \$2.75 to \$3 per net ton f. o. b. cars at the ovens; foundry hand-picked coke, \$3.50 to \$3.75 per ton at the ovens. Coal has not yet responded to a degree in keeping with the situation, but its ultimate goal is in sight.

Notice given by the officials of the Southern Pacific lines here this week as to the raising of the embargo on material going into Mexico by way of the Southeastern gateways presages good tidings for the iron and coke interests of the district. Already Alabama interests are in communication with the purchasing agents of the various Mexican smelters which are served through Laredo, Eagle Pass and other points. The foundries and smelters have been calling for coke and iron for some time past, but the railroads of the United States would not allow their equipment to go beyond the border. The lifting of the embargo provides for the through transportation of articles in equipment which leaves the mines and furnaces, etc.

The Automatic Gas Radiator Co., which has just recently perfected all of its fixture patents, ventilation devices, etc., has succeeded in having a large number of industrial and carrier corporations specify its machine for installation in their heating systems. B. A. Schroeder is vice-president and general manager of the company, with headquarters in Birmingham, and the automatic gas radiator is a Birmingham product.

Claims United States Would Have Been Involved in War If Shipping Bill Had Been Adopted

THE WAY IN WHICH AN AMERICAN MERCHANT MARINE MAY BE BUILT UP

[Special Correspondence Manufacturers Record.]

Waynesville, N. C., Dec. 2.

It must be with regret that the business men throughout the South and the Middle West are looking on the bringing forward again of the ship purchase bill. While it may be called non-partisan—and the principle should be non-partisan—the propositions anything but democratic.

The Secretary of the Treasury is a great and good man, but he must know now that every thoughtful American realizes that had the Government bought \$40,000,000 or \$50,000,000 worth of ships, either alone or in partnership with private or corporate capital, to compete with invested American capital engaged in ocean commerce, and had the ships been put in any other service than between this country and those for which the nation stands sponsor under the Monroe doctrine, this nation would now be involved in the European war.

The people of the United States will not stand for this Government becoming a partner with private or corporate capital to engage in direct competitive ocean commerce with invested American capital engaged in the same work.

There is no political or conservative business reason why this Government should buy a single ship to compete with American-owned ships, or ships owned by any other country, to carry American commerce, domestic or foreign.

Merchant marines are not started that way or established either by direct government ownership or government partnership in ownership of ocean transportation lines with private or corporate capital. That would be not only undemocratic, but un-American and in direct conflict with the American Constitution.

Fifty million dollars' worth of ships would not be more than a pebble dropped in the ocean so far as a competing system for world-wide commerce is concerned. But \$50,000,000 will provide \$10,000,000 a year as 6 per cent. interest for five years on enough ships to capture the South American trade under mail contracts awarded on the basis of their value at 6 per cent. per annum for five-year contracts, under fixed schedule time between the ports of this country and other countries agreed on, carrying provisions with the mail contract giving the U. S. Interstate Commerce Commission authority to regulate the freight rates on steamers carrying the mail.

A Government mail contract is as near in ocean commerce as this Government ought to be permitted to go in efforts to compete with American capital engaged in carrying ocean commerce. It is by mail contracts, called subsidies, that foreign countries have captured and amidst this war are controlling Mexican, Central and South American commerce that is the legitimate business of the United States.

Millions of people, through their Legislatures, have been and are now petitioning Congress, asking for mail contracts to be awarded to ships to engage in South American commerce from Southern ports. If there are any number of people, or any number of States, through their Legislatures, that have gone on official record asking Congress to purchase ships to engage in foreign commerce, the United States press has failed to be made aware of it.

The establishment of mail lines between the United States and foreign countries of nation-wide benefit should be absolutely non-partisan and have the co-operation of every element believing in God, progress and the opportunities for the uplift of the nation as a whole.

No national blunder equals that of the United States in the eyes of the whole world when, after assuming to maintain the Monroe doctrine, it adopted the penny-wise, pound-foolish policy practiced in the handling of commerce between the United States, Mexico, Central and South American countries. And to pass this ship purchase bill in the way it was drawn in the last session of Congress and defeated by a non-partisan vote would cap the climax, indeed.

Notwithstanding the Democrats that voted against it

were abused and called traitors all over the nation, no man can rise up today and prove by any system of figures and facts that those men have not helped save this nation from war, because if ships had been operated in the name of the Government some of them would long since have been torpedoed for carrying munitions of war and supplies to fighting Europe.

The first purpose of the bill was supposed to be for the establishing of mail lines to South American ports, and was generally approved throughout the nation, but as soon as it was learned that it was to be co-operation by the Government with private capital to meet high ocean freight rates, not between this country and the South American republics, but between this country and fighting Europe, it met defeat.

Is there any man that is willing to go on record and say that the commerce between fighting Europe and this country has been seriously retarded, or profits seriously diminished because of high freight rates between this country and Europe, that conditions would have been perceptibly effected by this Government buying \$50,000,000 worth of ships, or that anything would have been accomplished except a more critical and strained relation between this country and the warring nations of Europe?

Hundreds of millions of dollars are pouring into this country into the protected sections of the North and East, where they are equipped to manufacture the munitions of war, while the South is feeling but a breath of the great influx of these millions because the products are practically all on the free list and her raw materials are the basis of the munitions being manufactured in the protected end of this country that is bringing them millions.

And until the South and West combine (from which over 80 per cent. of all the supplies for the necessities of life and the munitions of war must come) and demand the opening of their harbors by ocean mail lines over the shortest route to handle the commerce of this country and foreign nations and the South American republics, there will be no great overflowing millions pouring into the South and West; never until they have mail lines and a reasonable tariff for revenue on the raw products of the South and West, giving the industrial and manufacturing possibilities and the laboring elements of the South an equal opportunity with those other sections of the country.

Forty-odd years of my life have been devoted to careful study of domestic and foreign commerce and to the inequalities of the co-operative efforts of the National Government militating against the Middle West and the South.

The opportunity is here now for the people of the South and West to secure, through Congress, the recognition of their ports, not by ships purchased to be carried wherever favoritism and political pull might want them distributed, but through long-time mail contracts from specific ports along the Southern coast to specific ports on both the east and west coasts of South America and to such European ports as it may be deemed economical and profitable.

The per pound rate for American-owned ships for carrying foreign letter mail is 80 cents; on foreign ships, 36 cents; on newspapers and packages on American ships, 8 cents; on foreign ships, 4½ cents. For the decade ending 1913 there went out the rise of 200,000,000 pounds, for which this Government paid \$24,971,462. There is no law providing that a record shall be kept of the letter mail and mail packages that come into this country, hence no accurate figure is available, but certainly as much comes in as goes out, which would make the value of ocean mail service upwards of \$50,000,000 the decade on foreign mail.

In connection with these mails there crosses the United States in bonds per decade approximately \$1,500,000,000 of commerce, yielding a freight value of about \$162,000,000. The approximate estimate of express crossing the nation in bonds is \$50,000,000 the decade. The express and freight together is over \$300,000,000 the decade, independent of the American mail. [Here

we have the equivalent of \$30,000,000 a year, or the equivalent of 5 per cent. on \$600,000,000 per annum, going to ships and railroads doing the foreign mail and bonded freight and express service.

This mail and this bonded service is monopolized chiefly by transcontinental railroads and the ports of New York and San Francisco, and the monopoly can never be broken until the ports of the South are opened by bonded mail contracts over the shortest line to build up commerce between the United States to South American and other foreign countries.

Will some gentleman get down to figures and facts and away from theories and show the American people that a \$50,000,000 ship purchase bill will be a safer proposition and a more economic proposition than to utilize \$50,000,000 as a basis of 6 per cent. for a period of five years to establish ocean mail lines, keeping the Government at peace with the ocean-carrying capital of its own country and in legitimate competing ships with the ocean-carrying capital of other countries who are engaged in American commerce under mail contracts, termed subsidies, that the American people, regardless of party lines, will have to accept as the only honest and legitimate help the Government can afford to re-establish the destroyed merchant marine, that owes its death to the Republican party of this nation, that took charge of this Government in 1860 and controlled its machinery for a half century, and based its future hopes on maintaining the war tariffs that the Democracy of the South refuses to accept because the South has emerged from the war believing in the old principles of a tariff for revenue only?

The experience of the nation has revealed that old methods are not adapted to the uniform upbuilding of the nation. Hence, one-half of the country has grown rich and is growing richer, and while the South has made forward strides unparalleled in the history of the world, applicable to all sections and interests of the country and adapted to the yielding of national revenue, and at the same time creating opportunities for capital, labor and business industry would bring. There is no room for free-traders in America today.

The shortest mail line to foreign countries will carry the trade as naturally as water runs down hill. And it is the function of the Government to provide them, and do it with as little competition as possible with private and corporate American capital engaged in building ships to handle American commerce and mails.

S. A. JONES.

New Oil Development in the Estill County Field of Kentucky.

Whitesburg, Ky., December 6.—[Special].—At a depth of about 600 feet the New Domain Oil and Gas Co. made a splendid strike in an oil well on the farm of Jesse McKenney, near Irvine, Estill county, below here. Even before the tools could be taken from the well the oil rose 300 feet, and in less than 24 hours' pumping the well produced 201 barrels. According to operators, this is the best oil well in the State, and is located about the middle of the Estill county field, now being rapidly developed. This makes the fifty-first producing well in the Estill county territory contiguous to the Kentucky River. So far as tested this field is only a few miles in extent, but the different companies operating there plan the extension of their operations soon after the first of the new year into new and untried territory. It is now generally believed that the whole of the Estill county field is rich in both oil and gas. A large number of leases for property is now being made. The New Domain Oil & Gas Co. is the pioneer company in the new territory.

First Carload of Automobiles for Eastern Kentucky.

Whitesburg, Ky., December 6.—[Special].—Judge Samuel Collins of this city has ordered a carload of Ford automobiles to be delivered here by the spring of 1916, the first carload of autos ever purchased in Eastern Kentucky.

The significance of this move is the indication is given of good road construction around this city. Through the persistent efforts of the Letcher Fiscal Court and the contribution of State aid, model roadways are being built as rapidly as possible.

Transportation and Foreign Trade*

By EMORY R. JOHNSON, Ph.D., Sc.D., Professor of Transportation and Commerce, University of Pennsylvania.

[Prof. Emory R. Johnson, Professor of Transportation and Commerce in the University of Pennsylvania, is recognized as one of the leading authorities of the United States on transportation matters. At the International Trade Conference in New York Professor Johnson in his address on Tuesday last presented some very strong reasons in favor of a merchant marine, the importance of which all recognize; but he pointed out with very great clearness how serious would be the mistake for the National Government to engage in ocean transportation. From his address we take the following.—Editor Manufacturers Record.]

The importance to a country's foreign commerce of having under the national flag a large tonnage of vessels operated under charters, that is, a large tonnage of "tramp" steamers, is not so definite nor so vital as is the importance of having a number of vigorous steamship lines under the country's flag, although it will hardly be doubted that the commerce of Great Britain has been much aided by the enormous tonnage of British steamers operated under charters. The ownership and operation of chartered vessels is a business that is competitive in the fullest sense, and that country will invariably have the largest tonnage of tramp vessels that has the most intelligent and liberal maritime policy. There can be no hope of securing for the service of the foreign trade of the United States a large tonnage of chartered vessels under the American flag if the conditions of operating vessels under the flag of the United States are more onerous than the requirements of the navigation laws of other countries.

The importance of the United States of its present and prospective foreign trade and the clear need for a larger merchant marine make it imperative that Congress should earnestly seek to adopt a maritime policy that will bring about a larger tonnage of merchant vessels under the American flag. Thus far, differences of opinion, both without and within Congress, have prevented constructive legislation; but the urgency of the present situation would seem to give promise of the ability of Congress to agree upon comprehensive legislation this winter.

An agreement, on the part of the advocates of different policies, as to the desirability of creating a Federal shipping board or of adding to an enlarged interstate commerce commission a marine department consisting of three commissioners expert in maritime matters, would be a logical foundation upon which to build up a law for the development of a larger merchant marine. It must be apparent to Congress that the problems connected with the development of a merchant marine are technical and of an administrative character.

The problems are technical in the sense that the ocean shipping business under the American flag is governed by a complex body of navigation and shipping laws regulating the construction, registry and tonnage measurement of vessels, boiler and hull inspection, the employment and discharge of seamen and many other details of the conduct of a complicated business carried on under conditions of world-wide competition.

The problem of rendering effective Government aid to the merchant marine is of an administrative character, and the success of any legislation concerning shipping must depend upon the efficiency of the executive agency entrusted with the application and enforcement of the laws enacted. The present shipping laws are administered by various bureaus, most of which are connected with the Department of Commerce. It is no reflection upon these bureaus or upon the able and conscientious chiefs thereof to say that the present machinery for the executive regulation and aid of merchant shipping needs the unification and strengthening that would result from the creation of an expert Shipping Board or Marine Department of the Interstate Commerce Commission.

The Shipping Board or the Marine Department of the Interstate Commerce Commission would be a body of experts, which, like the Interstate Commerce Commission as regards railroad regulation, would have much weight with Congress in all matters of legislation regarding shipping. The influence of such a board or marine department would be similar to that exercised

by the marine department of the British Board of Trade, provided the board was made up of experts of high standing and was vested with adequate discretionary executive powers.

This board should, first of all, be directed by Congress to investigate the shipping and navigation laws of the United States and to report at an early date a revised code of maritime laws. Such a board should make a careful study of the maritime legislation and regulations of the leading commercial nations of the world and prepare a code under which American shipping may compete upon fair terms with foreign shipping.

Congress should also make a liberal appropriation to be expended by the shipping board or marine department in aid of shipping. The board should be authorized to enter into contracts with a limited number of steamship lines from the United States to foreign countries. Congress should leave to the board the selection of lines to be aided, the amounts to be paid and the formulation of the provisions of the contracts made by the Government with the lines aided. By giving to such a board the responsibility of selecting lines that will be of real assistance in the development of American commerce, better results can be obtained than by the passage of subsidy laws such as have previously been enacted by Congress. The development of American shipping, by subvention or otherwise, is an executive task that should be entrusted to an able body of experts vested with large discretionary powers.

What the personnel of the board or marine department should be need not now be discussed, possibly a board of three men would be sufficiently large. The law creating the board probably ought to authorize the Postmaster-General to deliberate with the board when contracts involving the transportation of the mails are being considered, and it would also seem desirable to require the board to advise with the Secretary of Commerce whenever it is considering matters in which the Department of Commerce is interested. Whether the Postmaster-General or the Secretary of Commerce, or both, should be ex-official members of the shipping board is a debatable question upon which I would not care to commit myself at the present time.

The proposed shipping board or marine department should not have the power to engage in the steamship business, either directly or indirectly. It would be a mistake for Congress to adopt the policy of the Government ownership of ocean vessels, or of the operations of vessels through the agency of a corporation controlled by the Government. As I stated in a recent address to the American Manufacturers' Export Association:

"Adequate ocean transportation by ships under the American flag can be secured only by making the ownership and operation of vessels profitable. Private capital and initiative must be depended upon to bring about the development of the American merchant marine. In the long run, legislation can only aid in making the business of ocean transportation attractive to owners of private capital and to men ambitious to devote their energies to the management of steamship lines. Ocean transportation is not a business adapted to Government ownership and management, and the reasons for this are almost as obvious as they are convincing.

"In the first place, it must be clear to everybody who gives this question serious thought that the executive capacity of government in this country has not yet gotten beyond the ability to regulate business affairs. As the need for the regulation of transportation has become apparent, the United States and many of the States have gradually developed increasingly effective, but still by no means perfect, regulatory agencies. For some time to come the administrative machinery of government will be taxed to its limit by the work of regulating transportation and other forms of industry. Even if government ownership and operation of steam-

ship lines were theoretically desirable, the task ought not to be undertaken under present conditions.

"Moreover, such limited experience as the Government has had in the ownership and operation of steamship lines does not warrant undertaking the task on a large scale. The Panama Railroad Steamship Line has been a useful facility for the construction of the Panama Canal. It was wise for the United States, after having acquired this steamship line that was secured along with the concessions and property held by the French company at Panama, to retain and use the line to transport the men and material required for the construction of the canal. Construction work is still being carried on at Panama on a large scale, and it is probable that the Government will do well to operate the line for some time to come. Experience will show whether it is necessary to retain the line as a permanent part of the operating organization of the Panama Canal. Had the Government run the Panama Steamship Line purely as a commercial enterprise in competition with other steamship lines, it is not probable that net profits could have been shown. Although the Panama Steamship Line has been well managed, it has not been profitable to the Government except as a facility for the construction of the canal.

"If the Government could succeed in operating ocean vessels profitably, it ought not to undertake to do so. The government ownership and operation of transportation facilities, such as railroads or steamship lines, if justifiable, is only so under conditions of complete nationalization. When a government takes over all the railroads in a country and operates them with reference to the general transportation and social needs of the country, it may, if the government has exceptional executive ability, as is true of some countries in Europe, be successful and perform a valuable service to the public. On the other hand, the competition of government railroads with private lines has been shown by experience to be unsuccessful and undesirable. When the government starts upon the acquisition of the railways, it should continue until it has taken over the entire system within the country. Regulation of transportation by forced competition has long since been known to be unsound in principle. Regulation establishes standards of services and rates to be observed by all carriers; it seeks to secure what competition has failed to accomplish.

"It is believed that the same principles apply to ocean transportation. The competition of government and private lines would prove unsatisfactory both to the government and to the public. The government may choose between public ownership and public regulation, and whichever choice is made the government may enforce standards of reasonableness and equity; but the establishment of government lines to be operated in competition with private lines would be wrong in principle, and could not work well in practice.

"If the United States could regulate the ocean transportation business successfully by the establishment of government lines, would not the effect of competition of the government with private lines be to limit the investment of private capital in ocean shipping? There is no reason to doubt the sincerity of those who assert that they would hesitate to engage in business in competition with the Government. The purpose of government is the accomplishment of public ends; the object of private investment and private management is business profits. One having capital to invest with the hope of securing private gains will naturally hesitate to invest his capital in a business where he must compete with government enterprises carried on not to make dividends for stockholders, but to further general public ends."

Instead of making the proposed shipping board, or marine department, an agency by means of which the Government shall engage in the steamship business, it should be the function of the board to establish conditions that will make the shipping business more attractive to private capital. The duty of the board should be to guide Congress in legislation regarding shipping, to be the agency through which appropriations in aid of shipping are expended, and to be an instrumentality for the general supervision of the shipping business. The board should have full power of investigation. It would pass upon the formation and proceedings of conferences or associations of steamship companies and advise Congress as to the measure of regulation needed to insure the healthy development of the

*Extracts from speech delivered at International Trade Conference, Hotel Astor, New York, December 6-7-8, 1915, under auspices of the National Association of Manufacturers in Co-operation with Banking and Transportation Interests of the United States.

shipping business and to safeguard the rights of different classes of shippers. It would not be well, at least at the outset, to give the board power to regulate the shipping business in the sense that the Interstate Commerce Commission has power to regulate the railroads. The Interstate Commerce Commission for many years was a body whose powers were mainly those of investigation and supervision. Its mandatory functions were limited. It is not probable that the shipping business will ever require that degree of regulation that has been found necessary in the regulation of railroads, although experience in the supervision of ocean transportation may later indicate the wisdom of applying to the ocean transportation business many of the principles of regulation that have been followed in the regulation of railroads. However that may be, the general functions of a shipping board should, at the beginning, be primarily to aid and supervise rather than to regulate.

In considering the transportation problems connected with the development of foreign trade, the fact should not be forgotten that the successful growth of the foreign commerce of the United States does not depend solely upon securing more and cheaper transportation facilities. Transportation is an essential facility of foreign trade, but it is only one of several essentials. Commerce is the result of successful merchandising methods, and unless American producers, exporters and importers are good merchants they will be worsted in the foreign trade by the competition of skillful merchants of other countries. This is a fact that has been much emphasized in recent discussions, and it is clear to everybody that the American trader must meet the requirements of foreign markets in order to secure a large trade abroad. Until recently the domestic market has been so large and has so overshadowed the foreign market that only a few of the largest producers and traders have cared to adapt their methods to the demands of foreign buyers. Indeed, most producers do not find it profitable to develop foreign trade. These conditions have largely passed, and it is probable that American producers and merchants will in the future be able to meet the merchandising requirements of foreign trade.

International banking institutions are almost as important as efficient transportation in the development of foreign trade. The provisions of the Federal Reserve Act have made possible the establishment in foreign countries of branches of American banks, and the conditions created by the great war in Europe have given American banking institutions an exceptional opportunity to enter foreign fields. While only a beginning has yet been made in the establishment of the international banking facilities required for the successful development of a large foreign trade in American products, what has thus far been done is encouraging. It is believed that the growth of the foreign commerce of the United States will not be seriously hampered by the lack of banking arrangements.

With the adoption of the necessary merchandising methods, and with the establishment of adequate international banking arrangements, the growth of the foreign trade of the United States can be largely promoted by the creation of adequate facilities for the expeditious and economical transportation of the exports and imports of the United States. The transportation and other problems connected with the development of the foreign trade of the United States are numerous and difficult, but they are not impossible of solution if the American people and Congress will give to the problems the serious attention which their importance merits.

Plant for Manufacturing Hardware.

The new manufacturing plant of the Enterprise Hardware Co., Frederick, Md., begins operation this week. Its output will include door locks and spigots invented by Harry Ebert, the company's president, besides shoe lasts, shutter fasteners, hinges, hinge pins, coat hooks, iron kettles and flatirons for gas, electric and coal stoves. This plant includes 80x60-foot molding-room, 70x25-foot machine shop, with 50x25-foot extension, galvanizing-room with five large tanks, etc., all buildings being of brick and frame and metal construction on concrete foundations. The machinery includes boiler equipment, 25 horse-power steam engine, machine tools, steam-heating plant, etc.

Southern Coking Coal of the Elkhorn District May Make Chicago Iron and Steel Center

[Special Correspondence Manufacturers Record.]

New York, Dec. 4.

With combined expenditures by private capitalists, coal and coke companies and railroads exceeding perhaps \$125,000,000, dominant interests in the great Elkhorn coking coal fields of Eastern Kentucky are now in sight of their goal. They are opening rapidly to the business world the gateway to this rich section and predict surprising developments there.

The vast sums heretofore spent in the purchase of properties, the opening of mines, the establishment of coking plants and the construction of a network of transportation lines to give the traffic its markets have prepared the way. Henceforth, as the result of this preliminary work, the Eastern Kentucky field is expected to become larger and more important in progressive industry.

Because of the insistent demand for raw material in iron and steel making and the focusing of attention upon national preparedness, the Elkhorn district is splendidly situated from a strategic point of view. It can send its coal and coke to the South and to the West.

It can supply in vast amount a coking coal asserted by authorities to be equal if not superior to the coke of the Connellsville district, which for so many decades has made Pittsburgh the steel center of the United States.

And as it can produce both coal and coke cheaper than can now be done in the Connellsville section, there seems substantial foundation for the claim that soon it may take away from Pittsburgh its iron and steel crown and place it upon the willing brow of Chicago.

The tendency in steel plant building in recent years has been towards Chicago. Cheaper cost of assembling materials and nearness to consumers of the finished product have helped the Chicago district.

With the development of an ample supply of coking coal in Kentucky, steel dependence upon Connellsville will cease to exist. In the present world situation, with the United States realizing that it must soon develop the iron and steel industries of the South upon a broad basis for national defense, the importance of the second greatest coking field in the country cannot be overestimated.

The increase in iron and steel consumption in Europe, due to the war, and the present demand which far exceeds mill capacity here, call imperatively for record production in the United States next year.

It is estimated that the smelting industry of this country will require in 1916 from 80,000,000 to 90,000,000 tons of coal and coke and in excess of 70,000,000 tons of iron ore.

For much of the coal and coke it may depend upon the Kentucky field. A much greater percentage of iron ore may come from the South if the need for national preparedness spurs the country to action.

Hudson Maxim recently said: "Suppose an enemy should land at New York or Boston, or at any point between. Nothing under Heaven that we could do would prevent the invading contingent from capturing all that part of the United States between the Alleghenies and the sea within two weeks."

While there are many who dissent sharply from the conclusions voiced by Mr. Maxim, few can be found who care to argue against that part of a national preparedness plan which calls for an adequate iron and steel supply, free from capture by an enemy in war time. South and west of the Alleghenies, the natural "second line" of national defense, is the logical location for iron and steel plants, ammunition and powder plants, armor-plate mills and the varied industries which when war threatens or actually exists would be the nation's safeguards.

National preparedness, resting, as it must, as the MANUFACTURERS RECORD has pointed out, upon a dependable source of iron and steel, must secure it in the South. It must overcome present conditions wherein location of Northern and Eastern factories and mills near an easily invaded coast line offer a foreign enemy tempting opportunities for raids.

Capitalists and men of affairs who take into consideration the lessons of the present European war bear in

mind that Germany's first objective in its dash for world conquest was control of the mining and manufacturing regions of Northern France. Here French factories, French iron ore and French coal were at once utilized by German skilled workmen for the benefit of the Kaiser's armies.

After 16 months of war they are still helping the Teutonic invaders to retain their hold upon captured territory.

It is this situation today existing in France which gives to the plan for the rapid development of the Elkhorn coking coal district of Kentucky and similar development plans for other basic raw material districts in the South such significance.

These developments are more national than local, and it is concededly possible that their importance in international questions may become of major interest. The Southern iron and coal fields, with immediate proximity to vast undeveloped water power, increasing transportation facilities and expanding markets for products, are expected to become the center of an industrial and manufacturing activity of vast extent.

The formation of the new American International Corporation, the combination bringing together the greatest moneyed groups in America, is the keynote to what may happen in the development of Southern assets. The new company's work to place the trade of the United States upon an international basis will ultimately require alignment and grouping of productive units and of raw materials.

It is then that the South will reach its time of industrial reconstruction. It is then that its value as a national asset will be realized.

But the mission of the capitalist and of the banker who seeks to find a profitable pathway through the business wilderness for money-hunting work is to blaze the trail. When all the business world learns the advantages and the profits, and the road is clear, there is small inducement for Big Business.

Thus the present development of the Elkhorn coking coal fields has attracted the shrewd interest of the Rockefeller of the Standard Oil, who have put millions into the roads of the section and the bonds and stocks of its industrial corporations; of the great banking houses of Morgan & Co., Kuhn, Loeb & Co. and the leading banks of the metropolis.

Money aggregating many millions has been spent in purchase and development of lands by individuals and companies; and the railroads, awake to the value of the future tonnage from a section which exceeds in area and deposits the Connellsville district, have been foremost factors in preparing the way for the big development now at hand.

Up to this time the coal and coke from the Elkhorn field have been going to the Chicago district very largely. There is reason to believe that the early future will see some of it going into blast furnaces in the South.

Transportation companies, among them the Louisville & Nashville, the Baltimore & Ohio, the Chesapeake & Ohio and others, have spent around \$50,000,000 in extending old lines or building new ones, and others, like the Western Maryland, which is largely owned by the Rockefeller interests, have either built into the district or made traffic arrangements for a part of its freight.

Coke made from the Elkhorn seams of coal is now much in demand for by-product use. The yield of coke is about 71 per cent. of the weight of coal, and it contains less than 1/2 of 1 per cent. of sulphur.

The coal is easily mined. The mines are free from water and many are operated by electric power; some haul coal to the mine mouth by electric machinery; draw coke from the ovens, screen and load it into cars without man labor.

The urgent need of a low sulphur coke to meet the demands of a rapidly expanding iron and steel business has focused attention upon the Elkhorn section. The increase in output there seems the only solution.

As the Connellsville district gives yearly evidence of a diminishing tendency, the belief becomes more firmly founded that the supply of the future must come for a

long time principally from Elkhorn. It is the finest coking coal field in America, with the greatest future before it.

That it will in time become to the metallurgical interests of the country what Connellsville has been in the past is the confident prediction of those taking part in its development. There is active rivalry among the roads with direct facilities in the district for its tonnage.

The United States Steel Corporation has a long-term contract to take Elkhorn coal from the Consolidation Coal Co. of Baltimore, which owns 100,000 acres in the district, and has spent about \$12,000,000 in developing its properties. The coal being taken by the United States Steel Corporation is used in its big plant at Gary, Ind.

A contract between the Western Maryland Railroad Co. and the Consolidation Coal Co. gives to the road a large tonnage of freight. So great is Mr. Rockefeller's faith in this section that it is understood he has acquired a large block of securities of the Consolidation Coal Co.

Authorities as to both Elkhorn and Connellsville draw comparisons favorable to the former. They affirm unhesitatingly that the best of the Elkhorn lands should equal in value finally the highest price per acre paid for Connellsville coal lands.

In their opinion, Eastern Kentucky, with its superior coking coal, must inevitably duplicate the history of Connellsville. But as the future indicates great developments of iron and steel making in the South as well as around the Chicago district, the radius of its influence should be greater than that of Connellsville.

Their firm faith in the coming supremacy of the Elkhorn territory is increased by comparison of costs with Connellsville. The Pike county coal field is above water level. No pumping machinery is necessary.

In Connellsville the cost of lifting water from the pits is said to be in excess of that of hoisting coal. Very few mines in Connellsville are self-draining, because of the heavy dip towards the coal seams.

Connellsville's shipment of coke last year aggregated 14,975,638 tons, compared with 20,097,901 tons in 1913. There was a decrease of 10,000,000 tons in the total consumption of coke in the United States last year as compared with the year before.

War conditions caused this, so that the decided slump in Connellsville shipments last year could be attributed only in part to a diminishing supply.

In bituminous coal production Kentucky stands fifth among the States. Only Pennsylvania, West Virginia, Illinois and Ohio produce more than it does. Alabama is a close sixth in the race.

Pittsburgh's preeminence of the iron and steel industry of the United States may be lost in the near future. To Chicago will most likely be awarded the new crown, and in the district immediately adjacent will center great new iron and steel plants with a combined capacity so great as to insure supremacy in steelmaking for a long time to come.

That this consummation of the most striking change in an industrial base since the development of the iron and steel industry of the country is approaching actuality is vouched for by iron and steel experts. They put forward in support of their claims most important business evidence.

This swing of the iron and steel center from Pittsburgh to the Chicago district is to be brought about by welding the Elkhorn coking coal of the Eastern Kentucky district with the iron ores of the Lake Superior field.

As the inevitable result of this combination, it is confidently asserted that the cost of production of iron and steel in all its forms will be lower in the Chicago district than is possible in Pittsburgh. Through lower cost of assembling principal units of production at lake ports—ore, limestone, coal, etc.—and superior transportation facilities for distributing finished products in addition to shorter hauls to reach consumers, the steel manufacturers of the Chicago district are to wear the scepter which for so long has been Pittsburgh's greatest business asset.

As the fulcrum of the lever supplying the power for this titanic change is the Southern territory furnishing the Elkhorn coking coal. Developments in the Elkhorn territory have recently been rapid and surprising.

As the center of population shifts west, it takes with it an increasing capacity for consumption of iron and steel. Great new enterprises in iron and steel making, which have been held in check because of Pittsburgh's

domination of Connellsville coking coal, now see their way clear to establishing around Chicago the greatest iron and steel center in the world.

Cheap water and rail transportation for all raw materials; an ample supply of coking coal from the South sufficient to last for many years; situated at the center of population; surrounded by a section in which demands for iron and steel are larger and growing more rapidly than any other point; able to make economies in cost of production not now possible in Pittsburgh because of the increasing cost of securing its ore, the decreasing iron content in Lake Superior ores and the perceptible diminishing of the Connellsville coking coal, Chicago sees the iron crown almost in its grasp.

Elkhorn coking coal, which is expected to eventually place the Chicago district in the lead in cheapness of production and volume of output of iron and steel, is not an untested product. It long ago began to fulfill its destiny, foreseen by the MANUFACTURERS RECORD, of furnishing a superior metallurgical fuel for blast furnaces smelting the Lake Superior ores.

The use of Elkhorn coal from the mines of the Consolidation Coal Company at Jenkins and McRoberts has already given the Chicago district a commanding position in the steel world by reason of record-breaking results in blast furnace practice in the blast furnaces of the Illinois Steel Company.

Just as the existence of the Connellsville coking coal field built up the steel business at Pittsburgh to its present gigantic proportions, so the existence of the Elkhorn field assures the building up of a steel business at Chicago which in the not remote future seems likely to far outstrip that of Pittsburgh. The growth of Pittsburgh steel industry has always rested upon Connellsville coke.

The supply of coke from that field may never increase. In fact, it is asserted to be slightly diminishing. The iron content of the Lake Superior ores is also diminishing, and this is another factor in favor of Chicago as against Pittsburgh.

Whereas not many years ago it required only one and one-half tons of ore to make a ton of iron, it now requires approximately two tons. This is a more serious handicap to the Pittsburgh producer than to the one located in Chicago.

It means an addition to the cost of producing iron in Pittsburgh of twice the railroad freight of 88 cents on a ton of ore from Lake Erie ports. This, together with the cost of rehandling the ore because of rail delivery, gives the Pittsburgh plant a handicap of approximately \$1.80 on iron, which increases as the ores become leaner, and which amount is entirely saved in Chicago.

Until recently the Pittsburgh district had the advantage of much cheaper coke, owing to the proximity of the Connellsville coke field, the Chicago furnace having to pay heavy freight charges on Connellsville coke all the way to Chicago. In the early days this outbalanced the saving of freight on the rich ores.

With the advent of the by-product coke oven, however, it is now possible to manufacture coke of equal and better quality in the Chicago district from coals from the Elkhorn fields of Kentucky. And this, too, at a cost of only 50 cents per ton higher than the price of Connellsville coke at the Pittsburgh furnaces.

It must be borne in mind that it requires approximately two tons of ore per ton of iron, but only one ton of coke. While the ore consumption is gradually increasing, the coke consumption, through better economies, is decreasing.

By-product ovens cannot be installed in the Pittsburgh district with the same effect as in Chicago, because, first, the margin of possible saving is much less, due to the cheapness of beehive Connellsville coke; second, the principal coals necessary for making the desired quality of by-product coke are located in the Elkhorn field of Eastern Kentucky, which is a greater distance from Pittsburgh than the Connellsville field.

Because of this, by-product coke ovens in the Pittsburgh district do not represent nearly as attractive an investment as in Chicago, and hence are not likely to replace the existing beehive ovens in the Connellsville field for some time to come. The heavy existing investment in beehive ovens also militates against their early abandonment in favor of by-product ovens. Furthermore, the supply of Connellsville coking coal has been largely reduced.

Great progress has been made by the use of Elkhorn coal in improving the fuel economy of all the processes

entering into the manufacture of steel, from the coke consumption in the blast furnace to the melting and heating of steel and the production of steam and electric power. The saving derived from any given quantity of fuel reductions amounts to more per ton of steel in Chicago than in Pittsburgh, where fuel is a cheaper commodity.

Therefore the saving which Pittsburgh formerly was able to effect in comparison with Chicago by the low price of its coal and natural gas has in late years materially decreased. In this connection it should be stated that the natural gas supply in Western Pennsylvania is gradually diminishing and nature is withdrawing another advantage previously enjoyed by the Pittsburgh district.

The Steel Corporation, wisely foreseeing this, located its largest and most modern plant at Gary. Nevertheless, the market for steel products in the Chicago district is growing much faster than the producing capacity, with the result that large tonnages of finished steel products are shipped to the Middle West from Eastern mills.

Elkhorn coking coal can be laid down in Chicago at a freight cost of \$1.27 to \$1.40 per ton, using the rail haul from the field to Toledo and the low ton-rate water haul from Toledo to Chicago. It can go direct by rail from the Kentucky district to the steel furnaces in the Chicago district for \$1.90 per ton.

There is great activity in the Elkhorn district just now. A great volume of tonnage is going out over the Chesapeake & Ohio and other carriers. In fact, the tonnage now is stated to be of record size.

Nearly 25 years ago the MANUFACTURERS RECORD began directing the attention of iron and steel interests to the Elkhorn coking coal fields of Eastern Kentucky. In 1885 a correspondent of the MANUFACTURERS RECORD made a horseback trip from North Carolina across the mountains through the Breaks of the Sandy and the Elkhorn field to Ashland, Ky., in company with Gen. John T. Wilder, who was projecting the Charleston-Cincinnati-Chicago Railroad, a portion of which now comprises the Clinchfield Railroad.

This new field of coking coal of a superior quality was investigated and brought to public notice by the late Profs. John R. Proctor and N. S. Shaler while connected with the Kentucky Geological Survey.

Later the Big Sandy Company, which had been a pioneer in the field and had acquired a holding of upwards of 100,000 acres, through its persistent activity in presenting the enormous resources of the Elkhorn field succeeded in securing the building of a 100-mile railroad extension by the Chesapeake & Ohio Railway Company into the heart of the field. This was followed by the opening of coal mines on Marrowbone Creek and by the advent into the field of T. J. Mitchell of Uniontown, Pa., prominent for many years as a successful cokenmaker in the Connellsville field.

Under Mr. Mitchell's management a coke plant of 150 Mitchell rectangular coke ovens operated by electrically driven machinery has been built by the Allegheny Coke Company at Hellier, Ky. The coke from this plant has proved to be a superior blast furnace fuel and has found a ready market.

More recently a by-product coke plant has been built at Ashland, Ky., by the Kentucky Solvay Company, which has been using Elkhorn coal and is producing furnace and foundry by-product coke which experts pronounce superior to all others and which finds so ready a market that the plant is to be doubled in size.

Other large interests have come into the Elkhorn field, including the Consolidation Coal Company, which has installed mammoth coal-mining operations at Jenkins and McRoberts, from which Elkhorn coal is shipped in large quantities to the Koppers by-product plant of the United States Steel Corporation at Gary, Ind., in the Chicago district.

Considerable interest has been aroused here by the report that the bulk of the raw material in this developing coking field district in Kentucky will ultimately pass into the control of the United States Steel Corporation. It has no lands there now, but it is considered the logical owner of the greater part of the section when the interests now dominant dispose of their holdings.

Prominent in the Elkhorn district operations and ownership are the companies in which E. J. Berwind, Hayden Stone & Co., former United States Senator Clarence E. Watson of West Virginia, T. J. Mitchell of Uniontown, Pa., and the Big Sandy Co. are interested.

The Use of Fertilizers in the Production of Cotton

AN ANSWER TO THE QUESTION—HAS THE SOUTH A MONOPOLY OF COTTON PRODUCTION?

[One of the foundation industries of the world is the manufacture of fertilizers, for without the proper fertilization of the soil there would be a steady deterioration which would gradually exhaust all soils and ultimately lead to the agricultural ruin of any country, and that would mean the ruin of all its industries.]

Of recent years we have been learning more and more about the restoration of soil fertility and the necessity of increasing the yield per acre in order to reduce the cost of farm products. This is pre-eminently true in the raising of cotton.

Mr. D. B. Osborne of Atlanta, who has given exhaustive study to this subject, has prepared for the Manufacturers Record an article that is so illuminating in the discussion of this whole subject that we are not only publishing his article in full, but in connection therewith a letter from him to the Manufacturers Record as an explanation of his broad story.

This subject is one of vital interest to every man in the South, be he banker, merchant, manufacturer or farmer.—Editor Manufacturers Record.]

Atlanta, Ga., November 2, 1915.

Manufacturers Record, Baltimore, Md.:

Gentlemen—I read with a great deal of interest and profit each issue of the MANUFACTURERS RECORD.

The scope and character of many articles I have read in your paper have led me to submit the enclosed article, hoping it would meet with your approval and find space in some issue of your paper at no distant date.

I believe there is no other manufacturing line whose interests are so identical with and inseparable from the interests of its customers or the consumers of its products as the fertilizer business. The cause for this is that the benefits from the intelligent use of fertilizers are so great and invariable and so directly attributable to the fertilizers. The intent and purpose of the manufacturer in making and the farmer in using are one and the same, i. e., to grow larger crops at smaller cost.

The article I submit, therefore, is not intended as a trade paper. Any benefits that may accrue to the manufacturers now engaged or who may hereafter become engaged in this business are incidental; the primary object is the direct benefit of the farmers, and through the increased prosperity of the farmers the improvement of conditions in every line of business throughout the South.

I can appreciate how unnecessary it is for me to attempt to give you a history of the efforts of foreign countries to compete with the South in the production of cotton.

A survey of the existing records on the subject, however, develops several very important facts that I will present as concisely as possible.

Prior to our Civil War the South had practically a monopoly of cotton production as a staple crop.

During our Civil War the curtailment of production in this country and consequent high prices during and following the war stimulated the efforts of other countries who had been growing cotton in a desultory manner for home consumption to attempt to make their cotton crop a staple crop.

This "attempt" promptly grew into a settled purpose, which has been prosecuted with determination and attended with such success that today the foreign cotton crop amounts to only a little less than half of the world's consumption.

The high prices prevailing during the past decade, due in part to the almost periodical effort on the part of our farmers to curtail their cotton acreage (which, if it did not always result in a decreased acreage, at least retarded the increase), but mainly due to the increased world consumption of cotton, have stimulated these foreign growers to redoubled efforts, both in the planting of a largely-increased acreage, with approved farm implements, and in the installing of expensive irrigating plants where needed to insure an adequate supply of water at the proper time.

The American cotton planter is undoubtedly losing his prestige, for each season the per cent. of his crop to the world production is growing smaller. He owes his present importance in the industry primarily to the fact that the world's increased consumption of cotton has more than kept pace with foreign production. Minor factors are the ignorance and lack of experience of the foreign producers (which are being rapidly overcome) and a lack of transportation facilities, which has tended to discourage effort and restrict acreage.

India and Egypt are at present the principal offenders against our "monopoly," but there are millions of acres lying within a world "cotton belt" that give opportunity to Russia, China, Japan and a number of less important countries to compete with us in the production of cotton, and they are all planting a constantly-increasing acreage.

How long we can depend upon an increase in the world consumption of cotton to protect our crop from foreign encroachment is problematical, and, to say the least, it would embarrass us no little to let our indifference to this menace carry us far enough to find an answer.

Is it not time for our people to realize:

They no longer have a monopoly of cotton production, demagogues and politicians to the contrary notwithstanding?

That the interest of each country demands cotton at lowest cost, and to insure this low cost they are producing it at first cost?

That, in consequence, competition against us is increasing by thousands of men and millions of acres each season?

That the time has come when we but further jeopardize our present importance and hasten the demoralization, if not lose altogether our position as a real factor in the cotton-growing industry by restricting our acreage in the vain and foolish attempt to so shorten the supply that we will force the world to pay us a profit on our high cost of production?

Do not common sense and business prudence demand that the American farmer shall seek some other means of escape from this jostling than merely moving aside when each move takes him nearer the edge of a precipice? The American man has not the reputation of moving aside until he needs a pair of wings to secure his safety, and I do not believe the Southern farmer will budge another inch when he realizes what he is up against.

There is but one avenue of escape for the American farmer, and that is described by one word—efficiency.

He must use his brain as well as his brawn in the making of his crops.

It is not a question of how many or how few acres he plants to cotton, but for him to plant to the limit of his capacity to cultivate efficiently.

If the Southern farmer, with generations of experience and knowledge gleaned therefrom; with good roads radiating from the farm to his local markets; with transportation facilities, both rail and water; carrying his product with cheapness and dispatch to all the markets of the world; with the use of improved farm implements; with an ample supply of fertilizers of a grade and quality best suited to his soil practically laid down at his door—if, with all these advantages, he cannot prove his efficiency beyond that of his foreign competitors, who are lacking in all these essential elements of low-cost production, then, indeed, is the Southern farmer in a bad way.

The one thorn in the flesh of the Southern farmer is his high cost of production. The cause is the low yield per acre. You can fix the cost to plow, plant and cultivate an acre of ground, and whether this fixed cost results in a high or a low cost per pound depends absolutely upon the yield per acre. The acceptance of this statement as a fact is vital to the future success of the Southern farmer if it is true, as claimed, that cotton has been selling at or below the present cost of production.

Looking to the interests of this country, North, South, East and West, and particularly to the vital interest of the South, it cannot be denied that it is more to the South's interest to defend its position in cotton production against foreign encroachment than it is for the South to compete with the North in the production of wheat or with the West in the production of corn.

Undoubtedly a certain amount of diversification is healthy, and because of the clean culture and consequent drain of the cotton crop on the soil a rotation of crops is essential; but these diversified crops, in the main, and looking primarily to the low-cost production of cotton, should be soil builders—legumes. This means the growing of cattle, and for the Southern farmer cotton and cattle is the combination that spells success.

I have never heard it contended that the soils or climate of Georgia or the Carolinas were better adapted to cotton production than were the soils or climate of Texas. It is not contended that the people in these States are any more intelligent or energetic than the people of Texas.

The one trouble with Texas has been that she felt she had money in the bank in the shape of virgin soil fertility, and that she would take this money out of the bank before she began to make deposits.

She apparently forgot that money makes money—draws interest, and, likewise, potential or active plant foods in the soil are constantly working on inactive plant foods, thus increasing and building up the plant-food content of the soil. It is a banking proposition, pure and simple.

The growing of soil builders, such as legumes; the turning under of this stubble; the feeding of these cured crops to cattle; the pasturing of this cattle as a "rotation" for certain fields; the droppings from the cattle; the feeding of cottonseed meal; the profits from the sale of the cattle; the application of a complete and well-balanced fertilizer to the cotton crop to make up the deficiency of an abundant plant-food ration, is an endless chain in which there is no weak link.

It means cotton at a cost of 5 cents per pound or less. It means we can sell at the foreign producer's cost and still make money. It means we can supply the world with cotton at a price that will put the foreign producer out of business. It means we will get our "monopoly" back and give the politician and demagogue a chance to talk about and not lie about it.

Yours very truly,

D. B. OSBORNE.

A Development of Facts by Figures

A COMPREHENSIVE SURVEY OF FERTILIZERS AND THEIR RELATION TO THE COTTON INDUSTRY

By D. B. OSBORNE, Atlanta, Ga.

I will, with a degree of certainty, develop in detail the following facts:

In the production of the cotton crop for the past 10 years, in the sale of lint cotton alone, the farmers in the States of Texas, Georgia and South Carolina have lost each season as follows:

| | |
|----------------------|-----------------|
| Texas | \$74,823,159.00 |
| Georgia | 29,046,333.99 |
| South Carolina | 5,617,959.76 |

These facts are gathered from Government bulletins, giving the outturn of the cotton crop by States in 500-pound bales.

A comparison of the crop in one State with another for one season would be of little value, because of the possible variations in the growing season. Hence I have averaged the acreage planted and crop produced for a period of 10 years—1905 to 1914, inclusive—and our calculations are based on this 10-year average acreage and crop.

It is only by comparisons that a just appreciation of differences can be arrived at. It is my purpose, therefore, to compare the results of the State that uses the least amount of fertilizers per acre under cotton with the State that uses the heaviest application.

The use of fertilizers in Texas has been gradually increasing for several years past, but the amount used by the State compared to the very large acreage planted is so small as to be negligible, so we have in our calculations disregarded the cost of fertilizers as well as their effect on the crop, thus giving this benefit to the Texas results.

North Carolina uses a larger application of fertilizers per acre under cotton than any other State; hence it would follow that a comparison of results between Texas

and North Carolina would clearly show the effect of intelligent fertilization of the cotton crop.

However, Texas has the boll-weevil and North Carolina has not as yet been bothered with this pest. There would be many "doubting Thomases," who likely would want to attribute whatever difference a comparison of results in these two States might develop to the boll-weevil; hence I deem it essentially necessary to include the results of Georgia and South Carolina, each representing a still different class in the school of fertilization.

It is apropos to emphasize right here the fact that the soil of North and South Carolina and Georgia (three of the original 13 States) has been cropped for very many years, while the soils of Texas have been placed in commission at a comparatively recent date. The increase of acreage planted to cotton in the past 10 years is as follows:

| | Acre. |
|----------------------|-----------|
| Texas | 5,926,490 |
| Georgia | 1,625,369 |
| South Carolina | 413,369 |
| North Carolina | 486,432 |

It is not unreasonable to assume that a very large percentage, if not all, of the Texas increase was virgin soil, while the increase in the other States is soil that has been under cultivation in one crop or another for many years.

It is a well-understood fact that the average application of fertilizers per acre under cotton in the several States named is as follows:

| | Lbs. per acre. |
|----------------------|----------------|
| Texas | None. |
| Georgia | 250 |
| South Carolina | 350 |
| North Carolina | 400 |

The grades of fertilizers used in these States vary according to the necessity of the individual farm, and run from a 14 per cent. acid phosphate through the varying grades of acid phosphate and potash mixtures to complete fertilizers, which vary in analysis from what is commonly spoken of as an 8-2-2 to a 10-4-4 (8 to 10 units of available phosphoric acid, 2 to 4 units of ammonia and 2 to 4 units of potash).

The price paid by the farmer varies (according to grade or analysis purchased) from \$16 to \$30 per ton, the average price being right around \$22 per ton.

I desire not only to be fair, but liberal, to Texas in my comparison of Texas

COMPARATIVE STATEMENT, SHOWING THE DIFFERENCE IN YIELDS PER ACRE FROM THE NON-USE OF FERTILIZERS TO THE INCREASED USE OF FERTILIZERS PER ACRE.

Figuring Texas Acreage on Yield Per Acre of States Named to Compare Value of Texas Crop Without Fertilization to the Use of 250, 300 and 400 Pounds Fertilizer Per Acre.

| | Texas acreage. | Yield per acre. | Value of crop at 12 cents per pound. | * Cost of fertilizers at \$24 per ton. | Net value of crop. | Net value of Texas crop at 12 cents per pound. | Gain from the use of fertilizers. | Per cent. of gain to cost of fertilizers. |
|----------------------|----------------|-----------------|--------------------------------------|--|--------------------|--|-----------------------------------|---|
| Texas | 10,205,150 | 170.3 | \$208,552,445.40 | None Used | \$208,552,445.40 | \$208,552,445.40 | None Used | .. |
| Georgia | 10,205,150 | 208.5 | 255,332,853.00 | \$30,615,448.80 | 224,717,404.20 | ..... | \$16,164,958.80 | 52.8 |
| South Carolina | 10,205,150 | 248.3 | 304,072,649.40 | 42,861,624.00 | 261,211,025.40 | ..... | 54,658,589.00 | 127.5 |
| North Carolina | 10,205,150 | 271.4 | 332,360,325.20 | 48,984,720.00 | 283,375,605.20 | ..... | 74,823,159.80 | 152.7 |

Figuring Georgia Acreage on Yield Per Acre of South and North Carolina to Compare Value of Georgia Crop, Using 250 Pounds Fertilizer Per Acre, With the Average Yield of South and North Carolina, Using 350 and 400 Pounds, Respectively.

| | Georgia acreage. | Yield per acre. | Value of crop at 12 cents per pound. | Cost of fertilizers at \$22 per ton. | Net value of crop. | Net value of Georgia crop at 12 cents per pound. | Gain from the use of fertilizers. | Increased cost of fertilizers. | Per cent. of gain to increased cost of fertilizers. |
|----------------------|------------------|-----------------|--------------------------------------|--------------------------------------|--------------------|--|-----------------------------------|--------------------------------|---|
| Georgia | 4,924,777 | 208.5 | \$123,217,920.54 | \$13,543,136.00 | \$109,674,784.54 | \$109,674,784.54 | ..... | ..... | ..... |
| South Carolina | 4,924,777 | 248.3 | 146,738,655.49 | 18,960,370.00 | 127,778,285.49 | ..... | \$18,103,500.95 | \$5,417,234.00 | 334.2 |
| North Carolina | 4,924,777 | 271.4 | 160,390,137.33 | 21,669,018.80 | 138,721,118.53 | ..... | 29,046,333.99 | 8,125,882.80 | 357.4 |

Figuring South Carolina Acreage on Yield Per Acre of North Carolina to Compare Value of South Carolina Crop, Using 350 Pounds Fertilizer Per Acre, With the Average Yield of North Carolina, Using 400 Pounds of Fertilizer.

| | South Carolina acreage. | Yield per acre. | Value of crop at 12 cents per pound. | Cost of fertilizers at \$22 per ton. | Net value of crop. | Net value of South Carolina crop at 12 cents per pound. | Gain from the use of fertilizers. | Increased cost of fertilizers. | Per cent. of gain to increased cost of fertilizers. |
|----------------------|-------------------------|-----------------|--------------------------------------|--------------------------------------|--------------------|---|-----------------------------------|--------------------------------|---|
| South Carolina | 2,528,341 | 248.3 | \$75,334,448.43 | \$9,734,098.00 | \$65,600,350.43 | \$65,600,350.43 | ..... | ..... | ..... |
| North Carolina | 2,528,341 | 271.4 | 82,343,009.69 | 11,124,700.40 | 71,218,309.69 | ..... | \$5,617,959.26 | \$1,390,602.40 | 404.0 |

Figuring North Carolina Acreage on Yield Per Acre of North Carolina Experiment Station to Compare Value of North Carolina Crop, Using 400 Pounds Fertilizer Per Acre, With the Yield of the North Carolina Experiment Station, Using 1000 Pounds of Fertilizer Per Acre.

| | North Carolina acreage. | Yield per acre. | Value of crop at 12 cents per pound. | Cost of fertilizers at \$22 per ton. | Net value of crop. | Net value of North Carolina crop at 12 cents per pound. | Gain from the use of fertilizers. | Increased cost of fertilizers. | Per cent. of gain to increased cost of fertilizers. |
|----------------------|-------------------------|-----------------|--------------------------------------|--------------------------------------|--------------------|---|-----------------------------------|--------------------------------|---|
| North Carolina | 1,439,456 | 271.4 | \$46,880,203.00 | \$6,333,606.40 | \$40,546,596.60 | \$40,546,596.60 | ..... | ..... | ..... |
| Experiment Sta. | 1,439,456 | 393.6 | 67,988,385.79 | 15,834,016.00 | 52,154,369.79 | ..... | \$11,607,773.19 | \$9,500,409.60 | 122.2 |

*On account of higher freight rates and greater distances, we figure average cost of fertilizers \$24 in Texas.

results with other States. Fertilizer manufacturing points in Texas are few and far between; hence shipping distances are greater than in Georgia and the Carolinas. This condition can and will be promptly met as soon as Texas begins the use of fertilizers in sufficient volume to warrant the building of factories at all strategic points within the State. At present, and for the purpose of comparison, we will add \$2 per ton to the average price of fertilizers, making the Texas price \$24 per ton.

Now, when you consider—

The large acreage of strong virgin soil brought into use by Texas within the past 10 years—

The fact that the effect of all the fertilizers used in Texas the past 10 years (probably four to five hundred thousand tons) is included in the Texas results, with no deductions for the cost of fertilizers—

That I add \$2 per ton to the cost of fertilizers in Texas over the Georgia and Carolina price to cover a condition that can and will be corrected, which \$2 per ton reduce the results of the comparisons I am going to make from \$10,000,000 to \$16,000,000—

It can be readily seen that I have set "the use of fertilizers" no mean task to overcome these conditions and still make a showing worth contemplating.

To reduce these differences in yields to dollars and cents it is necessary to employ a price per pound for cotton. By averaging the high price and low price reported by the New Orleans Exchange each season from 1905 to 1914, inclusive, I find the average to be within a few points of 12 cents, so I will adopt the round figure to simplify our calculations.

With the foregoing explanations I submit the preceding statement, a careful study of which will clearly develop in the reader's mind at least one important fact—that the purchase of fertilizers is an investment, and not an expense. Further, the greater the sum invested per acre, the greater the net profits per acre.

Now, let me put the concrete facts in a supplemental statement so we can look at them more closely:

GAIN OVER TEXAS.

| State. | Average yield. | Increased cost of fertilizers over Texas at \$24 per ton. | Gain after deducting cost of fertilizers. | Per cent. of gain to cost of fertilizers. |
|----------------------|----------------|---|---|---|
| Texas | 170.3 | None | None | ... |
| Georgia | 208.5 | \$30,615,448.00 | \$16,164,958.00 | 52.8 |
| South Carolina | 248.3 | 42,861,624.00 | 54,658,580.00 | 127.5 |
| North Carolina | 271.4 | 48,984,720.00 | 74,823,159.80 | 152.7 |

GAIN OVER GEORGIA.

| State. | Average yield. | Increased cost of fertilizers over Georgia at \$22 per ton. | Gain after deducting cost of fertilizers. | Per cent. of gain to cost of fertilizers. |
|----------------------|----------------|---|---|---|
| Georgia | 208.5 | None | None | ... |
| South Carolina | 248.3 | \$5,417,234.00 | \$18,103,500.95 | 334.2 |
| North Carolina | 271.4 | 8,125,882.80 | 29,046,333.99 | 357.4 |

GAIN OVER SOUTH CAROLINA.

| State. | Average yield. | Increased cost of fertilizers over South Carolina at \$22 per ton. | Gain after deducting cost of fertilizers. | Per cent. of gain to cost of fertilizers. |
|----------------------|----------------|--|---|---|
| South Carolina | 248.3 | None | None | ... |
| North Carolina | 271.4 | \$1,390,602.40 | \$5,617,959.26 | 404.0 |

If the use of fertilizers results in an increased yield sufficiently large to return the cost of the fertilizers, and, in addition, give a profit on the investment varying from 200 to 400 per cent., the profit increasing in proportion to the increased use of fertilizers, the question naturally arises, "Is there a limit to the profitable use of fertilizers?" and if so, "What is the limit?"

Any sane business man having money to invest would jump at an investment that would safely yield him a profit from 200 to 400 per cent. In fact, the average business man would consider himself extremely lucky if he could secure a safe investment that would net him 15 or 20 per cent., and he would not be satisfied at a small investment, but he would want to invest to the limit of his financial resources. I use the term "safe investment" advisedly, for, bear in mind, the results I have shown are the average for ten years.

We know that North Carolina is the banner State in the use of fertilizers per acre under cotton, but we have evidence furnished by the North Carolina Experiment Station that the 400 pounds per acre is not the limit of beneficial use. I quote from their Bulletin No. 206, issued February, 1915, page 83, as follows:

"The results on the several fields and the averages of the three fields are quite uniform in showing increased yields and increased profits for the several increases in the amount of fertilizers, the quantity of fertilizer per acre varying from 200 to 1000 pounds. The largest yield, as well as the greatest profit, were obtained from the 1000-pound application. It is possible that the limit of the most profitable fer-

tilizer for cotton on this soil has not been reached and that more than 1000 pounds per acre would give remunerative returns. Additional experiments have been put out to test this, the quantity running up to 1000 pounds per acre.

"In addition to larger profits from heavy fertilization of the right kind, the land is in all probability improving in productiveness and value. Results on these plots and fields in after years will be most valuable in throwing light on this important phase of the proper fertilization for immediate returns and for the permanent improvement of the soil. This latter phase of farm practice is not given the thought and consideration it should receive by most farmers.

"Concisely, the average results for five years' experiments with different quantities of fertilizers are as follows:

| Pounds of fertilizer per acre. | Average yield seed cotton per acre, pounds. | Average increase per acre, due to fertilizers. | Average value of increase at 4½c. per lb. | Per cent. of gain over cost fertilizers. |
|--------------------------------|---|--|---|--|
| 200 | 656.5 | 402.4 | \$16.00 | *137.5% |
| 400 | 912.9 | 706.7 | 27.50 | 100.0% |
| 600 | 1268.9 | 858.2 | 32.90 | 204.3% |
| 800 | 1083.5 | 939.2 | 33.84 | 200.0% |
| 1000 | 1180.9 | 1053.1 | 36.86 | 208.4% |

*In order to show the per cent. of net profit on the cost of fertilizers at \$22 per ton I have added one column to the Department's table.

There is, of course, a limit where the increased use of fertilizers per acre will show diminishing returns on the investment, from a percentage basis, while yet the net profit per acre will still be on the increase, and it is this net profit per acre and not the per cent. of profit on the investment we must look to, at least until the per cent. of profit on the investment arrives at a reasonable or normal rate; then it can be said to have reached the limit of profitable investment.

In the foregoing analysis I have figured only the value of the lint cotton. There are several other items of increased value that should be included, such as:

Increased production of cottonseed.

Increased production of cottonseed oil, by reason of the increased oil content per ton of seed, as well as by increased production of seed.

Increased production of cottonseed meal.

Increased production of linters.

We shall treat only of the seed, oil and meal, throwing the linters in for good measure.

Seed-cotton "thirds" itself, one-third being lint cotton and two-thirds cottonseed.

The average production of seed cotton per acre in Texas for ten years was 5100 pounds; in North Carolina, 814.2 pounds per acre; the production of cottonseed was 340.6 pounds per acre in Texas, and 542.8 pounds in North Carolina. Figuring these amounts against the Texas average ten-year acreage, we have:

10,205,150 acres multiplied by 542.8 pounds equals 2,769,678 tons—85% to mill (estimated).

10,205,150 acres multiplied by 340.6 pounds equals 1,737,937 tons—80% to mill (estimated).

On Texas yield 1,390,349 tons to the mill.
347,588 tons for replanting or other uses.

On North Carolina yield 2,354,226 tons to the mill.
415,452 tons for replanting and other uses.

The net gain in seed to the mill, therefore, is 963,877 tons, at \$20 per ton, equals \$19,277,540.

OIL.

The Texas cottonseed contains an average of 38 gallons of oil to the ton of seed, while North Carolina seed contains an average of 45 gallons.

NORTH CAROLINA.

North Carolina Seed to Mill.

| | |
|---|------------------------|
| 2,354,226 tons, at 45 gallons of oil to ton..... | 105,940,170 gals. oil. |
| 105,940,170 gallons oil, at 45c., equals..... | \$47,673,076.50 |
| 2,354,226 tons of seed to yield 800 pounds meal to the ton equals 941,690 tons of meal at \$25 per ton..... | 23,542,250.00 |
| | \$71,215,326.50 |

TEXAS.

Texas Seed to Mill.

| | |
|---|-----------------------|
| 1,390,349 tons, at 38 gallons of oil to ton..... | 52,833,262 gals. oil. |
| 52,833,262 gallons oil, at 45c., equals..... | \$23,774,967.90 |
| 1,390,349 tons of seed to yield 800 pounds meal to ton of seed equals 556,139 tons of meal at \$25 per ton, equals..... | 13,903,472.00 |
| | \$37,678,439.90 |
| In favor of North Carolina yield..... | \$33,536,886.60 |

We, therefore, show the total gain in value to the farmers of Texas, figuring their acreage of lint cotton and cottonseed as produced per acre in North Carolina

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from the average use of 400 pounds of fertilizer per acre, as against the non-use of fertilizers in Texas, in the following:

RECAPITULATION.

| | |
|--|-----------------|
| Excess value of lint cotton produced on basis of North Carolina yields..... | \$74,984,720.00 |
| Excess value of cotton seed produced on basis of North Carolina yields..... | 19,277,540.00 |
| Excess value of oil and meal produced on basis of North Carolina yields..... | 33,536,886.60 |

Grand total gain..... \$127,799,146.60

The increased yield of cotton between the Texas yield of 170.3 pounds, and the North Carolina yield of 271.4 pounds on the Texas average ten-year acreage of 10,205,150 acres, amounts to 2,063,481 bales.

We deduct for picking, ginning, bagging and ties at \$10 per bale..... 20,634,810.00

Leaving a net gain from the use and after paying for fertilizers..... \$107,164,336.60

Bear in mind, this gain is the average of 10 years; in 10 years the gain would be ten times as great, or \$1,071,643,366.

To obtain the maximum yield per acre at a minimum cost per pound should be the ambitious determination of each individual farmer. It should be the basic principle of the farmer, upon which he builds the foundation of his success.

Justice to his wife and children demand it, for it means to them the comforts of life and a leisure that can be devoted to the improvement of mind, soul and body.

It spells prosperity for the State at large, for with the improvement of the farmer's ability to spend and to pay, will proportionately benefit every merchant, manufacturer, banker and railroad, or any other interest doing business in or operating within the borders of the State.

The price at which a commodity can be sold depends primarily upon three conditions:

Upon the law of Supply and Demand.

The per cent. of profit over cost it takes to satisfy a competitor in the same line, i.e., competition.

The judgment on the part of the buyer as to values.

Hence the selling price of any commodity is subject to fluctuations, and cannot be controlled.

On the other hand, the cost of production is absolutely within the keeping of the producer, beyond a certain limit of absolute minimum cost, below which no producer can go.

As the profit in the sale of a commodity is the amount received for it over and above its actual total cost at the time of sale, it follows that *cost price* as well as *selling price* controls the profit. If costs are kept at a minimum, the profits will take care of themselves, except in the event of a world disaster, such as the present war; and even then, after the first shock is over, we find conditions righting themselves.

If a line of business is producing a commodity on which it has a monopoly, and for which there is a strong demand, the producer can become very careless of his costs and exact of the buyer a profit above whatever his costs may prove to be. Just how long the world will permit itself to be robbed in this manner is a question open to debate; that such action on the part of the monopolist is legally and morally wrong there is no question for debate.

Since I was a small boy I have heard about the South's monopoly of the production of cotton. It was supposed to be a God-given monopoly, because it was one of soil and climate, and, as such, it could not be taken away from us. I have long since discounted this idea of monopoly of the South and relegated it to the use of politicians and demagogues, and perhaps to develop the histrionic ability of some schoolboy.

The fact is, the South has no monopoly. Referring to page 242 of the "Annual Cotton Handbook, compiled and published by Comptelburo, Ltd., London, 44th annual edition," we find:

| | |
|--|----------------|
| 1904 to 1908, inclusive, world's crop averaged..... | 20,961,000 B/C |
| 1904 to 1908, inclusive, American crop averaged..... | 12,767,000 B/C |
| Foreign crops averaged..... | 8,193,400 B/C |
| 1900 to 1913, inclusive, world's crop averaged..... | 25,555,000 B/C |
| 1900 to 1913, inclusive, American crop averaged..... | 13,513,000 B/C |
| Foreign crop averaged..... | 12,042,000 B/C |

I divided the 10-year period into two five-year periods in order to call attention to and accentuate the fact that, while we are holding the volume of our crop in check in order to force the world to pay a remunerative price over our high cost of production, other equally-favored sections of the world are planting an ever-increasing number of acres in cotton, redoubling their efforts by the use of improved farm implements and cheap labor to get all the advantage they can from the high prices our restricted acreage has brought about.

Foreign production was sporadic during the period of low-priced cotton, and if the American farmer had kept pace in his production with the world's requirements, and by intense cultivation and fertilization had kept his cost of production so well in hand that he could have made a profit in spite of low prices, he today would have little or no interference with his "monopoly."

Now that we have foreign competition, what are we going to do with it? No one can deny that this competition is growing apace under the present conditions of world demand and price. The question is, Can this country supply the world demand and at a price that, if it will not throttle, will at least greatly retard the further growth of foreign competition?

Let us view the matter from this standpoint. Many estimates as to the cost of production of cotton in Texas have found their way into public print, varying from 6 to 12 cents. In the cotton crop there are two productions of value to the farmer—lint cotton and cottonseed. We will, for argument's sake, assume the lint cotton cost him 8 cents to produce. The average yields we have shown to be 170.3 pounds of lint and 340.6 pounds of seed in Texas, and 271.4 pounds of lint and 542.8 pounds of seed in North Carolina.

If 170.3 pounds of lint cotton cost him 8c..... \$13.624
The value of his seed must be added to arrive at the total cost per acre to grow cotton, exclusive of fertilizers..... 4.257

Total cost per acre to grow cotton, exclusive of fertilizers..... \$17.881

Now, let us figure this cost against the North Carolina yield, with the added cost of 400 pounds of fertilizer:

Total cost per acre..... \$17.881
Cost 400 pounds of fertilizer..... 4.400

Total cost per acre..... \$22.281
Yield, 542.8 pounds of seed, at \$25 per ton..... 6.785

Leaving 271.4 pounds of lint to cost..... \$15.496
271.4 divided into 15.496 equals .0571c. per pound—a reduction in cost of lint cotton of .023c. per pound.

It must be borne in mind the overhead expense on the farm, interest, taxes, insurance, living expenses of the farmer and his family, etc., the plowing, planting and cultivating, is not increased in any manner by the application of fertilizers. The only possible expense to attach beyond the actual cost of the fertilizer is the hauling and distributing, and this cost is so small per acre and would affect results so little it is not worth figuring.

The Southern farmer, by a systematic adherence to methods of *intense cultivation* and *fertilization*, and by a *proper rotation of his crops*, can so enrich his soils in plant foods and improve their mechanical condition that he can easily grow a bale of cotton to the acre under normal growing conditions at not over a cost of five cents per pound for lint cotton.

This would enable him to sell below the actual cost of production of foreign cotton and still make a handsome profit on his investment. In this way alone can he hope to throttle competition and regain his "monopoly" before it gets entirely beyond his reach.

In its final analysis it is a "survival of the fittest"—a pitting of the efficiency of the American cotton planter against the efficiency of the foreign cotton planter.

I believe the American cotton planter is "fit" all right, but he has no mean task before him, and the sooner he gets right down to "brass tacks" and adopts methods that will force Mother Earth to yield the largest crop at the least possible cost, and by so doing be able to *manhandle* this foreign competition, the better it is going to be for the American cotton planter.

A STRONG ENDORSEMENT OF MR. OSBORNE'S STATEMENTS.

"More Cotton on Fewer Acres and at Less Cost" Must Be the South's Program.

Georgia Experiment Station,

Office of the Director,

Experiment, Ga., November 9, 1915.

Editor *Manufacturers Record*:

My attention has been called to a most interesting paper prepared by Mr. D. B. Osborne of Atlanta, Ga., on "The Use of Fertilizers in the Production of Cotton." This paper has been submitted to you, I believe, for the *MANUFACTURERS RECORD*, and I must give myself the pleasure of endorsing the article. I have not examined all the figures used by Mr. Osborne in the paper, but those I have examined are correct, and reveal to me a very important fact in the relation of the yield of cotton to the use of fertilizers.

You are doubtless quite familiar with the fact that the Southern United States is not growing its proportion of the world's output of cotton, measured by the standard of 10 years ago. Then we grew more than 80 per cent. of the entire crop of the world. Today we grow only a little more than 60 per cent. of the cotton crop of the world. What we do grow doubtless costs too much per pound to raise it, because our farmers are too much inclined to work away the entire year raising cotton with which to pay for food products, at a high price, that go into the raising of the cotton. If the United States can raise cotton for not less than 7 cents per pound, while other countries can raise it for 5 cents, it is only a matter of time when most or all of the cotton will be raised in other parts of the world and our cotton States of America planted in something else.

Mr. Osborne has given us a close study of the relation of fertilizers to the increased production of cotton per acre. It is a timely article, and I hope the people of the South will read and study it. Our motto must be: "More cotton on fewer acres, and at less cost per pound." He shows that the practical way to bring about this result is to increase the fertility of the soil. Those States that are using commercial fertilizers are enjoying a handsome dividend on the investment. This indicates wisdom in the use of fertilizers. Besides, we must reduce the acreage of our cotton in order to find room to grow other crops.

Trusting that you will find a place for the article in the *MANUFACTURERS RECORD*, and that it may be read widely, I am, Yours very truly,

R. J. H. DE LOACH,

Director.

Unique Industrial Development Among the Clouds Near Crestmont

[Special Correspondence Manufacturers Record.]

Newport, Tenn., November 30.

Among the hills that form the Great Smoky range at the end of the 21-mile Tennessee & North Carolina Railroad, that gives it touch with the outer world through Newport, rests Crestmont.

It has a population of about 400. It has no macadamized roads, but boasts one thoroughfare of native dirt *in situ*, along which are the dwellings of most of the residents. Crestmont has no mayor, council, taxation or politics. It has a bountiful and wholesome water supply, electric lights, modern sanitary requirements, telephones, a United States postoffice, a general store, a general medical practitioner, a barber shop, a clubhouse, and enjoys the privilege of being the private possession of the Champion Lumber Co.

In May the Champion Lumber Co. underwent a change in stock ownership, following which H. I. Miller of New York became president. Up to this time Crestmont had been doing each day its allotted task of converting hemlock and spruce logs into 150,000 board feet—whenever it got the logs—in the two band and one resaw mill and its planing-mill adjunct. Soon after Mr. Miller's accession there was a meeting of the directors and the announcement that the company intended to improve its property at both Crestmont, in Haywood county, about three miles from the Tennessee line, and at Sunburst, its other plant, 40 miles distant in the direction of Canton. In brief, it was stated that the company would spend \$750,000 on improvements.

An army of carpenters, millwrights, painters, plumbers, etc., at once began to do things. They had to provide accommodations for themselves. A bunkhouse with 14 rooms, and with a lavatory and two bathrooms, was run up and additional space added to the hotel dining-room. Other bunk and boarding-houses were built. New dwellings, with electric lights, telephones and sanitary appliances were built, offices remodeled and refurnished, the hotel added to and rearranged and the living accommodations all over town made more comfortable, modern and adequate. Nor were the children neglected, for a liberal extension was added to the meeting-house, used for both religious and school purposes, and it was equipped with school desks and paraphernalia of the latest pattern.

In the manufacturing department radical improvements were carried out, to the end of increased production and more economical handling. The sawmill was practically reset; a new lath mill installed to better re-work slabs, and a new conveyor built to carry waste to fire dump or such of the waste as in future would be burned. The improvements included a box factory to convert a large percentage of the previous waste into box shooks. This factory occupies one-half of a building of mill construction, 160x200 feet. It will have everything for the manufacture of all kinds of boxes knocked down for shipment. In the other 80x200 feet of the building is a planing mill with capacity of 200,000 feet in 10 hours. Its equipment included 30-inch and 15-inch matcher, 15-inch surfacer, 15-inch combined matcher and resaw, 12-inch molder, gang edger, horizontal twin resaw and band rip saw. Each machine in both factory and planing mill will be electrically driven by individual dynamo, the power being derived from an Allis-Chalmers 625-kilowatt steam turbine supplied by a pair of boilers 84 inches in diameter by 20 feet long at 150 pounds pressure.

Other construction work included a new supply warehouse and various yard offices, etc. At the height of this activity there were 510 persons on the Crestmont payroll. There were 400 more at Sunburst and several hundreds in the woods. At Sunburst a planing mill duplicating the Crestmont plant has been erected and equipped. It was said, on what seemed to be authority, that during that month about 2000 men were in the employ of the company, counting the two plants and the woods force and including the logging contractors.

The Champion company has the timber rights over 100,000 acres. This is estimated to give Crestmont a 17 years' cut and Sunburst a 15 years' cut. The mountain lumberman reckons growth other than hemlock or spruce as hardwood. Thus buckeye, birch, maple, bass,

hickory, chestnut, poplar, the oaks, etc., are so classed and run to about 25 per cent. of the whole. The chief output of the mill is hemlock and spruce, or spruce pine and balsam, as these woods are called in this country.

As these are mountain-top woods, the cut can be reached only by means of switchbacks at designated points along the 20 miles of standard-gauge railroad that has been built from the mill into the hills. Shay locomotives are available on the inevitably heavy grades, and of these there are six, mostly of the heaviest type. These operate 35 new Magor timber cars of the newest pattern, built for this company, and nine of an old design, or 44 in all. The laden cars are assembled at the Bottoms, about four miles out, from the various camps, and there made up into trains of seven cars. A powerful Shay takes the train, very slowly and carefully, down the steep grades and around the sharp curves to the log pond siding, where the logs are dumped. Some nine camps have been opened along the road, but not all are operated at this time. Other new camps are being established. The highest camp is No. 9. Viewed from No. 4, some eight miles from the mill, No. 9 seems to rest on the summit of Mt. Guyot. In reality, it is some 2000 feet from the top; high enough, at any rate, for comfortable railroading when it is remembered that Guyot rears its crest 6636 feet above tide and ranks next to Mitchell, with its 6711 feet, the highest point east of the Mississippi River. Since Crestmont stands at an altitude of 1800 feet, and camp 9 is 2800 feet higher, or 3600 feet above sea level, this is probably the highest lumber camp in the Eastern timber-cutting country.

The timber road follows the course of Big Creek, which, rising near Guyot, tumbles precipitously along its rocky and tortuous length to join its waters with Pigeon River, about three miles westward of Crestmont. It flows through a narrow valley that only occasionally widens into a flat; walled in by hills that seem to rise with almost vertical acclivity, there is afforded the railroad builder but scant foothold for his rails. It is on these steep hillsides that the lumber jack, locally known to fame as a "wood hick," with the aid of spiked boots and a due proportion of nerve, cuts with axe and saw into the massive butts or mighty hemlock and spruce for the saw logs. He will not, if he can avoid it, allow the log to slip down the declivity, for, as has happened, should it so start with any momentum it may travel 1000 feet or more, ripping up or smashing everything in its path, and only coming to rest after tearing up the railroad track or burying itself in a bank. E. J. Smith, the company's woods superintendent, cited an instance where a log that had been trimmed of its top branches slipped down the hill, and, after racing some 200 feet, buried its butt 20 feet in the bank of a ravine. The butt was allowed to remain, but the rest of the tree went for a saw log.

The Champion company employs the most modern method of conveying the logs from the woods to the mill. Steam skidders, stationed at desirable points along the railroad, haul out the logs in slings which travel on a so-called "bicycle," riding a steel cable stretched as taut as possible between a mast on the skidder and a suitable anchorage in the woods. The logs are dumped alongside the railroad, later to be gathered up by the steam loader and piled on the cars. The newest of these skidders is at camp 4, and has only lately been placed in service. It was built by the Lidgerwood Manufacturing Co., New York, and is said to be the largest in use and to have cost \$28,000. It is a skidder and loader combined, and from its 60-foot mast it operates a maximum length of 4000 feet of 1½-inch steel rope, of which 3000 feet is at present paid out and stretches for that distance up into the woods. From where it has fallen the saw log is hauled to the cableway by choker lines of 100 feet and longer, hitched onto the main hauling rope. When four or five such logs are assembled a sling is passed around them and the journey to the railroad completed. Oxen and horses and mules sometimes are employed in assembling the logs, a business that is fraught with danger to man and beast. The hauling is performed along a

runway, which, with use, becomes so slick that very little impetus gives the logs an ever-increasing momentum that outspeeds the best pace of the animals and finally outruns them. To safeguard men and animals when this happens, pits, or "jay holes," as the woodsmen dub them, are sunk, and into these the animal motor power and its human operator drop in safety from the resistless rush of the logs overhead.

As the improvements progressed conjectures were made as to the reason for the expenditure of so large a sum as three quarters of a million dollars in improvements at a time when the lumber market was not especially active. When asked about this P. C. Thede, the company's general manager, said that the company was preparing for the future rather than looking to the present in making this expenditure at this time.

FRANK J. KELLY.

[Answering an inquiry, General Manager Thede writes to the MANUFACTURERS RECORD: "Our machinery has been purchased from various sources, but principally Allis-Chalmers Manufacturing Co., Milwaukee, Wis.; Diamond Iron Works, Minneapolis, Minn.; Berlin Machine Works, Beloit, Wis.; Meehan-Johnson Company, Minneapolis, Minn.; Morgan Machine Co., Rochester, N. Y.; Linderman Machine Co., Muskegon, Mich.; Lidgerwood Manufacturing Co., New York city; Diamond Match Co., Chicago, Ill.; Magor Car Co., New York city; Lima Locomotive Corporation, Lima, O."]

Citizens' Training Camp to Be Established South.

Columbia, S. C., December 2.—[Special.]—The sand hill sections of the Carolinas and Georgia—a strip of land running through the center of the three States about 100 miles wide—is being inspected by United States Army officials, a party of which is in this section this week, headed by Capt. Gordon Johnson, aid-de-camp to Maj. Ken. Leonard Wood, relative to establishing a citizens' training camp similar to that conducted in Plattsburg, N. Y., last summer. Southern Pines and Charlotte, N. C.; Camden and Columbia, S. C., and Augusta, Ga., are being especially considered, and it is probable that the final decision of General Wood, who will pass on the proposition after all data has been secured, will direct the establishment of the camp at one of these places.

There are many questions to be considered before the camp is established. The first is that of the location of the camp site; the second, when to hold the camp so as to best suit the arrangements of the men that will be drawn to it for military instructions covering a period of from one week to three months, the latter being the entire length of time the camp will be held, and third, how to get the information into the hands of the prospective students and "rookies."

The first question will be decided after an inspection of all the camp sites proffered which are located in or near the points mentioned above.

The answer to the second question will come from the men who are eligible, as they will be asked through the newspapers what time they prefer to go to camp. The majority will rule. It is expected that the camp will be started the early part of next spring.

Arrangements are being made to disseminate general information through the newspapers of the South, giving full details of the purpose of the camp. The camp will be open to the men of Virginia, Kentucky and Tennessee. That the newspapers will assist in this work by publishing the news of and about the camp is indicated by the fact that the Southern newspapers generally are exploiting the preparedness propaganda.

The training camp, wherever located, will bring to that point, it is estimated, about 1000 civilians and as many regular army officers and men, with full equipment.

Government Contract for Anniston Company.

The Kilby Locomotive & Machine Works, builders of locomotives, logging cars, cane cars, mining cars, etc., Anniston, Ala., has received an order from the Panama Canal for 381 cast-iron keel blocks and 102 cast-iron bilge blocks, weighing approximately 1000 tons, for use at Dry Dock No. 1 at the Pacific terminal of the Panama Canal.

News and Views from Our Readers

Great Activities in Lumber Noted at Pascagoula.

CHAS. E. CHIDSEY, Pascagoula, Miss.

The wave of prosperity that the MANUFACTURERS RECORD predicted would sweep over the South is apparently about to strike Pascagoula.

Mr. E. J. Jane, president of the Merchants and Marine Bank of this city, informed the writer today that the output of lumber of this port would be greater during the next 45 days than it had been for any like period during the past five years. Mr. Jane analyzes the situation as follows: During the past few years the mills that cut for the interior trade, finding their market dull, entered into competition with the mills on the coast, whose business was that of export to foreign ports only. Now the markets of the interior are looking up and the mills that supply that demand have all the orders that they can fill, the export mills have a clear field and good prices. One of the signs of the times is that the J. J. McIntosh Mills at Moss Point, that have been closed down for 11 months, will resume operations December 7, having a plentiful supply of logs and good orders on hand.

The E. B. Martin shingle mill and veneering plant, in this city, is running full capacity and proprietor lately refused a large contract for veneering.

The Alabama & Mississippi Railroad, that last August leased the Pascagoula, Moss Point & Northern Railroad, with an option of purchase, will rush the work, as the president of the Alabama & Mississippi, S. E. Turner, is also president of the Vinegar Bend Lumber Co. and a large exporter of pine lumber. G. M. Luce of Lucedale, president of the Kansas City Lumber Co. at Lucedale, who is likewise one of the directors of the Alabama & Mississippi Railroad, is also a large exporter of pine lumber. It is expected that trains will be running over the road during the next 90 days.

Suggestions Invited as to How to Develop Western Carolina.

W. L. HENSON, Clerk Superior Court, Sylva, Jackson County, North Carolina.

I have been thinking over the letter on abrasive garnet and corundum that Col. S. A. Jones, who is doing so much for the upbuilding of Western North Carolina, wrote for your great paper that appeared September 30. Recently Colonel Jones delivered a most instructive address to the people of Jackson county, showing it to be one of the greatest, if not the very highest, mineralized counties in the United States, suggesting that with our vast water-powers and reasonable co-operation on our part with capital, thousands of men could be put to work here; that there was no reason that our people could not be taught, with all the raw material at hand, to manufacture these minerals for the market and sell them at good profits rather than ship the crude material to distant points to be manufactured.

Does the MANUFACTURERS RECORD believe this to be practicable, and if it does, how are we to secure the larger capital and the expert labor requisite to teach our labor to engage in these various manufacturing industries that so many of the minerals of this section are adapted to?

Much Building Activity at Charlotte.

F. C. ABBOTT, Charlotte, N. C.

Charlotte real estate has stood up under the war panic perhaps as well as any place in the South, and I believe is making as quick a new start at the present time as almost any other Southern city. There are at least \$150,000 of new residences just completed or in process of construction, also the new Government post-office to cost \$250,000; the new Piedmont & Northern immense new warehouses being completed, to cost about \$300,000; a new automobile display building for the Central Realty Co., to be occupied by the Overland

Carolinas and Buick automobile companies, to cost \$40,000; the Ford people have just moved into a new three-story cement building built for them by W. W. Hagood on a term lease, costing in the neighborhood of \$100,000; the new Mercy General Hospital is nearing completion, costing approximately \$100,000, and there are a number of smaller projects under way or in contemplation for the future.

Lengthening Our Subscription List.

PANOS C. PAPPAGEORGACOPOULOU,

Banking. 77 Kolocotroni St.,

Chartering.

Piraeus, November 5.

Commission.

Manufacturers Record.

Baltimore, Md.:

Dear Sirs—I beg to acknowledge receipt of your favors of August 20, September 18, October 9 (post-card) and 15, with different lists enclosed of American manufacturers, for which I thank you. I am indeed very obliged to you for the two copies of the MANUFACTURERS RECORD you were kind enough to send me, as well as for both advertisements inserted in the columns of your honorable newspaper. I am now sending you herewith, to your order, a draft of \$6.50 on the National City Bank of New York, in New York, for an annual subscription to the MANUFACTURERS RECORD.

Awaiting your acknowledging receipt of same, I am,

Very truly yours,

For PANOS C. PAPPAGEORGACOPOULOU,
Davidsgil.

Wants to Reach Extensive Growers of Sunflower Seed.

ROBERT L. STEELE, President Steele's Mills, Rockingham, N. C.

Would you be so kind to put me in communication with party who is cultivating the sunflower on an extensive scale, marketing the seed? Some time since I saw a newspaper article giving name and address of this party, but have mislaid the article, and have forgotten the address of this party. I wrote the Agricultural Department for its bulletin on the culture of the sunflower, but they report that they have none on hand; that all had been given out. The MANUFACTURERS RECORD keeps so well posted on everything, I have turned to you for this information.

Zinc and Lead's Wonderful Showing for 1915.

THE LYON INVESTMENT Co., Joplin, Mo.

Not a gold-mining camp on the American continent will show a production for 1915 equal in value to the zinc and lead produced this year in the Joplin district. For the 11 months just ended the output of zinc ore (including calamine) has been 555,323,525 pounds, which sold for \$20,694,186. During the corresponding period of 1914 the production of zinc was 474,189,212 pounds, which sold for \$8,898,709, thus showing an increase during the past 11 months of over 17 per cent. in tonnage but more than 132 per cent. in value. The production of lead for the 11 months just ended has been 81,507,115 pounds, which sold for \$2,145,982, while during the same period of last year the output was 77,024,756 pounds, which sold for \$1,782,400, thus showing an increase during the current period of less than 6 per cent. in output and a little more than 20 per cent. in value.

The total value up to date of lead and zinc in this district is \$22,840,168, of which \$2,849,917 was produced during the month of November, or a weekly average of \$712,958. Should this average be maintained during the month of December it will bring the year's total to nearly \$25,700,000.

During the week of November 7 the price for top grades of zinc advanced to \$100 a ton, followed by another advance to \$110 during the next week and a fur-

ther advance to \$115 during the week ending November 21, at which price the market held steady during the week of November 28. One year ago during the same month the top prices for zinc were from \$42 to \$46 per ton. The current month closes with lead ore selling strong at \$70 a ton, as against a top price of \$47 at the same period last year. Current New York quotations on spelter are above \$18 per hundred pounds, as compared with a quotation of \$5.15 at the same time last year. Current quotations on pig lead are around \$5.25 per hundred, compared with a price of \$3.80 in 1914.

The previous high record of zinc production in this district was in 1912, when the output amounted to 301,978 tons, which sold for \$15,454,000. If the present rate of output is maintained throughout December the total for 1915 will exceed this record by a little over 800 tons in production and approximately \$7,000,000 in value.

Interesting and Helpful—Would Not Be Without It.

D. H. MURRAY, William S. Whiting, Elizabethton, Tennessee.

We find your paper interesting and helpful in keeping in touch with the new building in the South, and would not be without it.

Anniston's Big Munition-Making Plant.

Mr. James Mitchell, president of the Alabama Power Company, who some months ago organized the Southern Munitions Corporation, with offices at 120 Broadway, New York, writes the MANUFACTURERS RECORD regarding the plant, which we have previously announced as to be established in Anniston, as follows:

"We have been hard at work getting our manufacturing enterprise shaped up at Anniston. We have closed a lease for the car works which can be extended at our option for a period of 10 years, with a right to purchase at any time. We have in our service a Canadian consulting engineer who has had a wide experience in England and Canada.

"Our equipment is exceptionally heavy and we are in a position to handle projectiles up to 12 inches or even larger, although we will have to add a considerable number of lathes for finishing the outsides in order to get the necessary output within the contract period. Our orders for the forge blanks have been placed with the United States Steel Products Company, and the copper bands have been ordered from the Seymour Brass Company of Connecticut.

"A cash capital of \$250,000 has been subscribed, of which \$100,000 was raised by the citizens of Anniston under the guidance of their Chamber of Commerce.

"The order for the 50,000 projectiles which we now have in hand we regard as merely the entering wedge toward much larger developments.

"It is our hope that the Federal Government will see fit to support an enterprise of this sort and enable it to become a permanent institution.

"I would like to accentuate the fact that the Alabama Power Company has no further interest in the enterprise than to furnish it electricity for lighting and motor power and to do everything that it can to make it prosper and become a permanent asset in the development of the city of Anniston."

In accordance with plans recently announced, the Anniston (Ala.) Ordnance Co. has now been incorporated with a capitalization of \$300,000, and supersedes the Southern Munitions Corporation. This new company is proceeding with the plan to equip the Anniston Car Works building with machinery to manufacture war munitions and high-grade electric furnace steel. The new company's officials include: President, James Mitchell, president of the Alabama Power Co., New York and Birmingham; vice-president, Theodore Swann of New York; directors, W. P. Hassinger, R. I. Ingalls of the Ingalls Iron Works and Major John S. Sewell, a retired army officer of Anniston.

DEMOCRACY VS. SOVEREIGNTY.

Darwin P. Kingsley's Remarkable and Illuminating Address on the Great War.

The American Branch of the League to Enforce Peace, of which ex-President Taft is president, has issued in pamphlet form the address of Darwin P. Kingsley, "Democracy vs. Sovereignty," made at the recent annual banquet of the Chamber of Commerce of the State of New York, held at the Waldorf Astoria in New York city. The following salient paragraphs from the address outline his remarkable utterances:

Into the terror and chaos which today misrule the greater part of the world certain questions are increasingly thrusting themselves:

1st. What was the fundamental error in the civilization of the world on August 1, 1914?

2d. What fundamental change must be made in order to correct that error?

Of written and spoken answers to the first question there is no end. Answers to the second question are naturally fewer, because the facts necessary to coherent thinking cannot be arrived at until the first question has been answered.

All the peoples of all the warring countries believe their cause is just; that they are fighting defensively for their existence. And the paradox of it is that all these beliefs are true. They are all fighting for existence and for fatherland.

I heard Dr. Bernhard Dernburg say in the early days of the conflict, defending Germany for her invasion of Belgium, that the act was a necessity; that a nation could not be expected to consent to its own destruction.

Commenting on our last and formal protest to Great Britain, against what we deem her violation of international law, and her disregard of the right of neutrals, one of the great London dailies, justifying England's determination to retain control of the seas at all hazards, said: "A nation cannot be expected to commit suicide."

These expressions from either side, almost identical in phraseology and absolutely identical in philosophy, reflect the existence of a cause of war not often referred to, under compulsion of which, however, the whole world rests today.

The flames which burst into a world conflagration 15 months ago were not only already burning under cover fiercely everywhere in Europe, but unquestionably were lighted, unquenchably lighted when world civilization based on the doctrine of sovereignty began to take form centuries ago. * * *

At the very outset sovereignty assumes that it must ultimately fight; that war is its true explanation, and therefore it reserves the right to take the last dollar of its citizens or subjects, and, if necessary, to demand the sacrifice of their lives as well. The favorite phrase of sovereignty runs in this wise: "In defense of our liberties and our soil we will fight to the last man."

Whatever the form of government, the sentiment is the same. Behind that sentiment and in obedience to its necessities the prejudices, the provincialisms, the misconceptions, the hates, the fears and the ambitions that so bitterly divide nations were born. On the first of August, 1914, they had grown to uncontrollable proportions. * * *

The people of the various great powers of the world in 1914 in fundamentals were not dissimilar. Never in the story of man's evolution had he been so nearly homogeneous. Everywhere he had approached common standards. His dress was much the same over most of the Christian world, and this uniformity had even made headway against the ancient prejudices of the Orient. He thought much the same everywhere. His standards of justice were strikingly alike. He was kindly and merciful. His vision reached far beyond the borders of his own land, and he was beginning to understand that all men are brave and should be brothers. * * * The movement which foreshadowed a democratic world, the brotherhood of man, meant the end of the existing international order, and sovereignty instinctively knew and feared that. * * *

What was destroyed, or is to be destroyed, is not yet clear. Was it democracy? Or was it sovereignty? The ultimate destruction of one or the other is probable. World peace is possible under either, but not under both.

Out of this hideous ruin will sovereignty ultimately arise rehabilitated and increasingly aggressive? Will a group of powers finally emerge substantially victorious

and will the controlling power of that group by perfectly logical processes gradually make its civilization dominant over the whole world? That is the only process by which sovereignty can ever bring permanent peace. So long as there are even two great unconditioned sovereignties in the world, there can be no lasting peace.

Or is it possible that out of the ruin will come the revolt of humanity? Will a real Demos appear? A democracy that has no frontiers, the democracy of humanity? Remembering not only the slaughter of 1914 and 1915, but the program of slaughter followed all through the Christian era, will the people say with young Clifford in Henry VI:

"Oh, War, thou Son of Hell."

Is it conceivable that they may say to sovereignty:

"You have in some things served us well in ages passed. You have awakened in us heroic aspirations and led us to noble achievements; but now, alas! your hands drip with innocent blood, you are guilty of deeds which the beasts of the jungle would not commit—deeds that show you to be inherently and necessarily, in the present condition of the world, the arch enemy of the human race, and therefore we must now fundamentally modify your demands."

Milton, in the Sixth Book of Paradise Lost, tells how Satan, rebellious, and all his hosts, after a terrific struggle, threw themselves headlong

"Down from the verge of Heaven."

He tells us, too, how the Almighty stayed His own hand because

"* * * he meant

Not to destroy, but root them out of Heaven."

Flanders and Poland tell a tale of horror, record the use of machines and instruments of destruction, register a story of cruelty and hate, such as even the Miltonic imagination did not compass. The Satanic crew now busy in Europe, whether their blood guilt is the result of dynastic and race ambitions or, as I believe, the product of forces beyond their control, must in like fashion be cast out if we are ever to have peace in this world. * * *

Before considering what we should do in the interest of humanity, what we should do to discharge our obligation and our duty, let us consider what we should do at once, not as a measure of philanthropy, but as a measure of safety.

First, we should arm, and arm adequately; not because we believe in that theory of government, we do not, we hate it; nor because we believe in that method of settling international difficulties, but because we must at all hazards protect this home of democracy from the Satanic brood which, driven from Heaven, apparently fell in Flanders and Poland.

Second, we must at the same time try at least to show that we are as great as Fate has decreed that we may be.

"But specifically," you ask, "what should we do?"

We should signify our willingness to meet representatives of all the considerable powers of the world in an international congress, the purpose of which shall be similar to that of the convention which met in Philadelphia in 1787. * * *

At the close of the Napoleonic wars the people of Europe expected a new order and the end of war. They looked for the United States of Europe. Metternich and his associates denied that hope and so readjusted continental Europe as to strangle democracy. But the dream of the people was borne over seas and the United States of America in 1915 is the colossal fact which dams the continental sovereignties of 1815, and points the way to a regenerated Europe.

Emerging from this hopeless, senseless and desperate struggle, the people of Europe will desire democracy as never before. They first brought democracy to us. Shall we now take it back to them?

The Cotton Movement.

In his report of December 4, Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during four months of the present season was 5,516,612 bales, an increase over the same period last year of 1,079,547 bales. The exports were 1,792,373 bales, an increase over last year of 467,182 bales. The takings were: By Northern spinners, 945,369 bales, an increase of 35,007 bales; by Southern spinners, 1,314,522 bales, an increase of 253,914 bales.

BUR CLOVER AS A SOIL BUILDER.

In Recent Years Experimentation Has Demonstrated Unexpected Value of a Wayside Weed.

[Special Correspondence Manufacturers Record.]

Newberry, S. C., November 30.

Bur clover, because of its very simplicity, has grown for years at the door of the farmers of the Southeast and has gone unnoticed and unused until within the last decade or so, when a few thinking agriculturists began experiments that brought it into commercial use. In it these prospectors have discovered the greatest of all agricultural "claims," which, with the least of effort, would produce "pay dirt" in the form of better crops, lasting and increasing fertility of soil and a year-round beauty of landscape.

In Columbia I asked Commissioner of Agriculture E. J. Watson if there was much bur clover to be found in South Carolina.

"I should say there is," he answered, "and if the efforts of this organization count for anything I expect to see the whole State covered with it. Agricultural South Carolina is making herculean efforts to reduce its fertilizer bill and at the same time increase its crop production. With bur clover and other leguminous plants, combined with a small amount of ground limestone, acid and rock phosphate, we were able last year to make a larger general crop, with less fertilizer, comparatively, than we ever have before, and within the next few years we expect to hang up a record in this work that all other States will strive to reach."

Commissioner Watson suggested that I call on Col. Alan Johnstone, lawyer and farmer of this place, and so today's early morning sun found Colonel Johnstone and myself strolling over the 100 broad acres owned by the former and his sister, the most of which is within the city limits of Newberry.

Colonel Johnstone, like most of the other pioneer growers of bur clover, discovered its value through his experiments, without the aid of expert advice. He noticed that it grew in abundance—wild—on the streets of Newberry some 10 years ago. After his experiments had turned out successfully he planted it over practically all of his property. His pasture and crop lands are alike sown in this feed-producing and land-enriching legume.

Several healthy, contented Jersey milk cows, whose main sustenance in all seasons is bur clover, were brought out for inspection. Colonel Johnstone stated that they only received, once a day, a little food from the barrel, as during the rest of the day they roamed at will in a prolific field of green clover. The hogs, too, seemed to be waxing fat and healthy, as they cut little paths through the fresh green "burs."

"I do not give them anything except a little concentrated food at the end of the day, and that is to keep them from getting wild," said Colonel Johnstone. "Since I have been growing bur clover I have had better success both with my cattle and hogs than I have ever had before."

"It is necessary, however," he continued, "to put rings in the pigs' noses, as they are fond of the root of the bur and would root it up, and that would be disastrous to the continuity of its growth."

On one 10-acre tract Colonel Johnstone has had particularly notable success with bur clover. On this tract he has realized in one season a net profit of \$2500 on an outlay of \$500. Bur clover had been growing on it during the winter months, furnishing green food for the livestock and at the same time drawing nitrogen from the air and leaving it in the ground. In the spring, corn and cowpeas were planted. The peavine hay and the corn sold for the above stated amount that year. The \$500 represented the cost of the 300 pounds of acid phosphate used and the cost of labor for sowing and cultivating both crops.

Soudan grass planted with bur clover yields much profit. A field of this grass was inspected and Colonel Johnstone stated that he had gathered two cuttings this summer from this field and found it to be the very best of hay.

Here are some of Colonel Johnstone's truisms on bur clover:

"Bur clover, like the cowpea, enriches the soil, gathering nitrogen from the air and storing it in the earth. "It will grow in almost any soil except wet and

marshy land, although it is best suited to clay land. "It is easy to sow, only needing to be thrown on top of the earth, and the rains of the fall will beat it in sufficiently to bring it up. Between the 15th of August and the 15th of September is the best time to sow, although good results have been obtained from seed sown as late as the 1st of December.

"When once sown it will ever thereafter perpetuate itself, although it may be easily destroyed by being plowed under while green.

"It does not hinder the cultivation of a regular crop during the summer months, as the seed will not sprout sufficiently during hot weather to cause any inconvenience. Each succeeding crop comes from the seed of the former crop and not from roots which would hinder plowing.

"Cows fatten on it; poultry revel in it; hogs like it; it makes great pasture for sheep and goats."

Bur clover, according to the Government Agricultural Department, is adaptable to growth in the eastern part of Virginia and North Carolina; all over South Carolina; Alabama; the northwestern "arm" of Florida; all over Mississippi, Louisiana; Eastern Texas; Southern Arkansas; Southeastern Oklahoma; Western Tennessee, and a small strip of Pacific coast land running from Oregon to lower California. It will be seen, from these facts, that the South has the advantage over all other States for the growth of bur clover, and in view of the fact that it is particularly a Southern asset, all experts agree that it should be developed to its greatest possibilities.

ROY G. BOOKER.

Building Big Molasses Tanks at Key West.

Two tanks, each with capacity 1,000,000 gallons of molasses, will be built on Trumbo Island at Key West by the Florida East Coast Railway, E. Ben Carter, St. Augustine, chief engineer, to store molasses to be brought from Cuba. They will each be 78 feet in diameter by 30 feet high, of steel construction, to be equipped with pumps and piping, the total cost to be approximately \$29,000. The Graver Tank Works, East Chicago, Ind., has the construction contract, and the railway company will install the machinery. It is understood that the Florida East Coast Railway is providing these tanks and equipment for ballasting its car ferry steamer, the Henry M. Flagler, between Key West and Havana, with Cuban molasses.

Many Municipal Improvements Under Way at Knoxville.

Knoxville, Tenn., December 4—[Special.]—Under the commission form of government, a great deal of municipal activity is promised here for 1916. The new commission has served two months and has passed the annual budget for the fiscal year. In this budget is an appropriation of \$15,000 for motor equipment for the fire department and other departments, for which the city will be in the market after January 1. Also \$10,000 for an addition to the Moses School, notwithstanding the city expended during the present year \$75,000 on school buildings.

The commission is composed of John E. McMillan, Mayor, a banker and four commissioners—Sam E. Hill, John W. Flenniken, N. T. Little and Jas. G. Crumbliss, four business men, who were elected by a vote of the people. All of their subordinates are under the civil service, with the exception of the city attorney, recorder and treasurer. The contract for furnishing the city lights having expired, the recorder has been instructed to advertise for bids for furnishing the city not less than 600 arc or street lights and the lighting of all municipal buildings. Bids will be received until 12 o'clock December 31, 1915, for furnishing the city lights. (In another column of this paper an advertisement for bids for lighting the city of Knoxville may be found.) This lighting contract will cover the White Way of Knoxville, which will include more than 12 city blocks.

The paving work under the abutting property plan for the year 1915 has been completed and the city has advertised for bids on \$27,000 five-year 5 per cent. bonds. These bonds are to be paid by the city when they fall due. The city collects the assessment from the prop-

erty owner. Under the law the property is liable, but the city is also as a whole liable for the payment of the bonds.

The first improvement district for paving during the year 1916 has been passed to its final reading, and others will be presented and passed between now and spring.

At its next meeting the city commission will take action in regard to submitting to a vote of the people a bond issue of \$50,000 for parks in the city. It will also consider the advisability of issuing \$125,000 viaduct bonds, an act having been passed by the General Assembly giving the commission the power to do so if desired.

Trade conditions in Knoxville are among the best in years. The plants, mines, factories and marble quarries are all busy with large forces of hands, and the outlook is exceedingly good for 1916.

R. P. WILLIAMS.

More Than a Million Cigars a Day Made in Tampa.

Tampa, Fla., November 29—[Special.]—The greatest month's output of cigars in the history of Tampa will be the result of this month's activity in cigar manufacture. With the close of business last Saturday, November 27, there had been manufactured in Tampa since November 1 in round numbers 33,883,000 cigars, many of them "made in bond," and practically every one clear Havana.

Cigar manufacture for the week ending November 27 broke all previous records, 9,035,000 having been the week's output in five days, the factories having closed down for Thanksgiving.

Such a volume of business as was never before known has been coming in to local manufacturers, and orders have been piling up with such rapidity that every cigar-maker who is competent is employed at top wages. A few months ago, owing to the general stagnation of business, there were many unemployed cigarmakers in Tampa and the facilities of charitable organizations were taxed to meet the needs of the families of these men. All that is changed now and just the reverse is true. Tampa's cigar industry is employing thousands of workers, the greater part of them high-class cigarmakers who are capable of earning fancy wages. The factories are putting out thousands of dollars in wages every week, and local merchants are feeling the benefit of this additional money which is given circulation in the city. As a result business in all lines is better, merchants report larger sales and better collections and real estate is moving more rapidly than at any time during the last few years.

Many of the local factories, which are scattered all over the city and West Tampa, an adjoining municipality, are working overtime, and some of them have been running at night.

During the year 1914, which was considered a "bad" year by all businesses on account of the European war, Tampa manufactured 267,866,000 cigars. This record was slightly under the total output for 1913, 286,148,000 cigars; 1913 was considered a normal year.

In 1897, when the cigar industry first became one of importance here, Tampa shipped or manufactured 90,408,000 cigars, or less than three times the number manufactured in the four weeks of November this year ending Saturday, the 27th.

As the result of the cigar manufacturing here, Tampa is the eighth customs port in the United States, as announced some time ago from Washington.

ARNOLD HEIDT.

The Way Canada Builds Drydocks.

The official test of the drydock and ship-repair plant at Prince Rupert has been made, and it has been pronounced ready for work. This plant was built by the Grand Trunk Pacific Railway, and was projected by the late President Charles M. Hays of that company.

The completed plant consists of a 20,000-ton floating drydock, the second largest on this continent; carpenter shop, shipbuilding shed and launching platform, machine shop, boiler and blacksmith shop and foundry. There is also a concrete power-house, with boilers of 2400 horse-power, and two 1000-kilowatt turbo-gen-

erators, together with an air compressor having a capacity of 1500 cubic feet per minute.

The floating drydock is made up of three parts, which will fit together in any combination, or may be operated separately and at the same time. By a special link-and-pin device any pontoon is easily removable for examination or repair.

A steel derrick, capable of lifting 50 tons, is installed for the purpose of handling heavy lifts into and out of ships, and is used as well for handling heavy commercial freight for the railway. Traveling cranes are installed in all the shops as well as in the power-house.—U. S. Consul Linnell in Commerce Reports.

To Develop 40,000 Horse-Power Additional.

An initial development of 10,000 horsepower and an ultimate capacity of 40,000 horsepower is planned at Great Falls, on Caney Fork River, Tennessee, by the Tennessee Power Company of Chattanooga. A concrete dam will be constructed to form a large reservoir, from which water will be conducted by a tunnel through the mountain to a power-house below the falls. The company has recently secured additional contracts for electric power for the Aluminum Company of America's plant at Maryville and for zinc mining companies at Mascot. It operates more than 500 miles of high-tension transmission lines connected to more than 100,000-horsepower motors, the electricity being generated at the Parksville development. A 20,000-horsepower steam-driven electric plant, 10,000 to be available about next spring, is being built to augment the Parksville hydro-electric station.

Kentucky River Power Co.

Surveys and preliminary work have been completed for the \$300,000 electric plant to be built by the Kentucky River Power Co., Hazard, Ky. Construction will begin next spring, and the plant building will have brick walls and steel framing, with concrete foundations, floors and roof. The initial installation will include a 2000 horse-power steam turbine, with two 500 horse-power boilers fired by automatic stokers. Ample space is being provided for additional equipment when required. The company has begun installing a 750 horse-power (increasing to 1250 horse-power) unit at its Glomawr plant to furnish electricity until the new plant is completed. It will soon complete its 15-mile transmission system, and has long-term contracts for furnishing electricity for power to nine coal-mining companies. R. L. Cornell is the company's manager and engineer.

Tanning Acids from Scrub Timber.

Whitesburg, Ky., December 6—[Special.]—Another new industry for Eastern Kentucky, promising to become one of considerable importance, is the manufacture of tanning acids from the underclass or scrub timber which grows in considerable quantities in the mountain forests of this section. Armour & Co., according to representatives of the company who have been here investigating the field, expect to locate a plant or plants for the manufacture of the acids as soon as they find suitable property.

Tanning acids are used in the manufacture of leather. The supply of raw material hereabouts—in fact, over the whole of the mountains—is practically unlimited.

Galveston Drydock & Construction Co.

Additional facilities for repairing and building vessels will be provided at Galveston by the Galveston Drydock & Construction Co., Charles N. Crowell, manager. This company will build a modern shipyard designed to handle any repair work on ships trading through Galveston and to construct wood or steel vessels up to 300 feet long. This plant will include 1000-ton marine railway built by Crandall Engineering Co. of Boston, floating drydock of steel and wood construction, with ultimate lifting capacity 10,000 tons, designed and built by the Galveston company's manager; machine shops, boiler shop, woodworking equipment, etc.

Broad Development That Has Occurred in Alabama's Mineral Resources

THE BIRMINGHAM DISTRICT DECLARED TO HAVE NOW BECOME A SELF-CONTAINED PRODUCER FOR THE MARKETS OF THE WORLD.

In the course of a personal letter of unusual interest Mr. James Bowron, president of the Gulf States Steel Co., gave many interesting facts regarding progress in metallurgical matters in the Alabama district, from which we publish, with Mr. Bowron's consent, the following:

"The old furnaces taken over by the Steel Corporation at Ensley have been pulled down and rebuilt, and the old steel works have been rebuilt. Instead of having a capacity of 300 tons per day, as the Ensley steel works had in 1898, it has today a capacity, in my opinion, of 2000 tons per day, yet you complain that we are not building a new plant. The Ensley works of today are equal to seven works such as existed in 1900, so far as the output is concerned, but stop and consider the cost. I do not know anything about the Tennessee Coal & Iron costs, but I feel very confident that they are able to hold their own against all competition under all circumstances from any other part of the United States or any other part of the world. What is the result? It means that they can keep their plant running at all times, instead of being wet weather operations, running in times of prosperity and then shutting down for a spell. Population builds up, men buy their homes, and regular lines of business are established. Under today's operations each single blast furnace at Ensley is worth economically many furnaces of 20 years ago. Seventy-five per cent. of coke is recovered from the coal instead of 60; 50 per cent. of the gas is saved and used in open-hearth furnaces, soaking pits, and for reheating and calcining purposes. Before burning it has been washed, tar and pitch recovered for roofing purposes, sulphate of ammonia, benzol and naphtha recovered as salable products. An immense new industry has been created in the Birmingham district by the by-product recovery plants at Ensley, Fairfield and Woodward, and these will be followed, I venture to assert, at a very early date by a plant of similar character at Gadsden, on which I am now working.

"When the original Ensley furnaces were built it is my recollection that the company raised about \$880,000 to apply upon them, four in number, less than a quarter of a million dollars apiece, and the new plants in this district today represent, for blast furnace and coke even expenditures, not less than \$1,500,000 each, six-fold what they used to do, and yet you speak of the 'great command of capital' drawn to Birmingham in the early days. If you compare such coal mines as Edgewater, with magnificent engine-houses and shaft operating from two different levels at a single lift of the hoisting engine, with the old-time early mines, driving into a drift with a wooden tippie, and if you compare the modern ore mines on Red Mountain with splendid electrical equipment, washhouses, steel lockers for the men and orderly, sanitary, well-arranged mining camps with the cheap and rickety shacks and the open-air mining without any power plants of 35 years ago, the same comparison as to capital employed would prevail, or an even greater ratio would be required. I venture to say that \$250,000 is required in our local red ore mining where \$25,000 would have sufficed in 1875 to 1885.

"Instead of purchasing land upon which to dump unsightly mountains of refuse, the blast furnace slag is now removed for railroad ballasting, and is so handled as to make it a source of revenue to the furnace industry, and the slag from the steel furnaces converted into a phosphatic fertilizer is in the utmost demand.

"The 150 tons per day wire operations at Ensley of 1899 are replaced by a 400-ton-per-day capacity, on a much more modern scale, whose entire motive power is furnished by the electricity generated from the surplus heat of the Fairfield by-product ovens.

"Furnaces have been rebuilt at Thomas and at Woodward, and at the latter place by-product ovens and a benzol plant have followed. This company has merged with another, taking vast areas of mineral lands under its control, has been acquiring surface lands and water rights, and is obviously getting ready for some other

departure, as to which, however, its plans, if formed, are not yet made public.

"In our own concern, instead of having a blast furnace which could only operate at great disadvantage, owing to its situation, we have striven to correct these disadvantages, and have underpinned the entire proposition by the acquisition of more than 100,000,000 tons of the best self-fluxing ore, which we hope to reach in April next. It is proper to lay the foundation before you build a superstructure, and after we have developed our ore in the ensuing months we will then be able to come before our stockholders and the public, I believe, with other plans for development, which will remove us at least from the reproach of stagnation, which your editorial implies. As a matter of fact, we have already increased by 30 per cent. in some directions and 60 per cent. in others the output on the market of finished steel, as compared with five years ago, and have so greatly reduced our cost as to make it assured that our company is in the business to stay, and will no more be susceptible to the 'slings and arrows of outrageous fortune.'

"In other words, to summarize, I want you, as the warm and sincere friend of this district, to realize and appreciate that its success is not to be based on the number of its plants, but upon their size, and, above all, on their efficiency, and that steady progress has been made, and is still being made, both in tonnage outputs, in organization and reduction of costs, and that incidental to these purposes there has been and is being built up throughout the district metallurgical-chemical industries of a very important character, and in my belief the district is being made much more worthy than it has ever been before of the investigation by Congress or by private capital of the location of plants for which existing concerns can furnish the raw or semi-finished material.

"It is only fair to say also that instead of being mere hewers of wood and drawers of water, and exhausting the resources of the district to sell cheap pig-iron, it is now more and more standing upon the permanent basis of producing and selling finished products and commanding therewith both domestic and foreign markets. It is within my own knowledge that the finished steel products of this district are going to England, France, Russia, Italy, to South Africa, India, Siam, Japan, China, Honolulu, Argentina, Costa Rica and the West Indian Islands. The district is no longer a mere ore mine or quarry for the purpose of distant pig-iron buyers; it is a self-contained producer for the markets of the world, and as such will grow in accordance with its own needs."

Editor Liddell of Engineering and Mining Journal Outlines "Preparedness" Necessities.

Among the many letters recently received in commendation of the campaign which the MANUFACTURERS RECORD has been undertaking in regard to the development of the iron and steel interests of the South and Southwest being absolutely essential to "National Preparedness" is one from Mr. Donald M. Liddell, managing editor of the Engineering and Mining Journal. In commending this work Mr. Liddell sends us a copy of a letter written to Dr. Edward Weston of Waverley, N. J., in which he pointed out with very great clearness many interesting facts in direct harmony with the statements which have been made in the MANUFACTURERS RECORD on this subject.

Mr. Liddell emphasized the fact that the bulk of our industrial plants are within an easy day's march of the Atlantic coast, and called attention to the need of developing in the central West and far West munition-making industries if we would be at all safe from the possibility of invasion. In this he gives some interesting statements to the effect that the Germans were far-seeing enough to have been laying up for 12 years high-grade zinc ore, which has helped them to meet the

present war situation. In the course of his letter Mr. Liddell said:

In connection with the preparation of this country for defense against the aggression of any foreign Power, there is one point which I wish you would bring to the attention of the Naval Advisory Board in case you feel that there is justification for the views expressed below.

We have already seen from the results of twelve months of war in Europe that modern warfare is 50 per cent. decided in the machine shops. We know from these reports which have gotten by the censor that France has been seriously crippled by the consequences of its great industrial concentration in its northern provinces and the occupation of this territory by the Germans. The industrial activity and the industrial population of this country are probably more concentrated in proportion to the total territory involved than even in France. The great bulk of our industrial plants lie within an easy day's march of the Atlantic coast—one may almost say within gunfire of a modern battleship. That under our democratic form of government any great directing movement by which the Government could dictate the placing of a large number of industrial plants in the Mississippi Valley or other interior points seems out of the question, but what we might hope for, and what I greatly desire that the Naval Board should advise, is the placing of certain of the Government's workshops away from the immediate sweep of any army which would invade the United States.

So far as I know, the United States Arsenal at Rock Island, Iowa, is the only one of the Government plants not situated within easy reach of the Atlantic coast line, or what is almost as bad, on the Pacific coast. It does not seem proper that so great a proportion of the Government's capacity to manufacture the munitions of war should be concentrated in so small a territory in the East. The Government should certainly be urged to put up such arsenals in the middle West and Rocky Mountain States as would insure its ability to continue war in spite of the gravest disasters to the Eastern coast. Apart from the establishment of arms and explosive factories in this territory, I am by no means sure that the Naval Board should not strenuously advocate the establishment of a navy-yard in St. Louis.

I do not think that this idea is as wild as it sounds. In that neighborhood there is a trained industrial population to draw on, and even in time of peace repair parts for our men-of-war could be manufactured there and shipped to the various navy-yards on the coast at not an exorbitant freight rate. This yard could also be equipped for and used as the base of submarine manufacture, sending them down the Mississippi into the Gulf of Mexico, or in times of peace even freighting them in sections to the various coast points. Then, in case of war, regardless of what happened to our Atlantic or our Pacific coast, or to both simultaneously, we would not be without some means of continuing further naval warfare.

The supply of the important metals and raw materials for carrying on industrial work in case of invasion seems to be assured so long as we maintain control of that section of the country west of the Mississippi, or, rather, when we include Chicago, with its iron furnaces. The copper refineries of Montana could unquestionably keep us going on a war basis on that metal; the zinc fields of Wisconsin, Joplin and the Western zinc smelters, and the lead mines and smelters of the West, seem to reassure us on those points. Though even as regards the supply of raw material, it might be well if the Board should recommend the investigation of our coal resources in the West; that is, would the coal fields of Colorado, New Mexico and Wyoming supply enough good blast-furnace coke to keep the blast furnaces of Gary and South Chicago running in case the United States should lose control of the Pennsylvania and West Virginia coal fields. In this same line I think there should be an investigation as to whether the copper-wire drawing and sheet-copper rolling mills and brass rolling mills of the West would be equal to a war demand, and, if they would not, whether the Government might not properly subsidize additional plants in the middle Western region. If these Western coal fields were not sufficient, would it not come within the province of the Board to recommend subsidizing the Steel Corporation, the Inland Steel Co., the Republic Iron & Steel Co. and others to the point of paying interest charges on the capital and storage charges on the space involved in the storage of a vast coal supply in the middle West?

In this connection let me call your attention to an incident at one of the recent meetings of the Mining and Metallurgical Society of America. Mr. Ingalls, the well-known zinc expert, had been talking on a subject of brass used in cartridge manufacture, and had stated that although there was probably no drawing operation so severe on the metal drawn as cartridge making, he thought the military experts had insisted upon a little too high a grade of spelter for cartridge brass. "I have not heard that the German military authorities have exhibited any such crazy demands for high-grade spelter. What have they been doing for their supply of it?" And a little later he again asked the question: "But what are they doing in Germany for high-grade spelter for cartridge making?" At this point Mr. Stone, vice-president of the New Jersey Zinc Co., stated: "The Germans were stocking high-grade zinc ore when I was in Germany twelve years ago." It is such long foresight as this, which has been stocking high-grade zinc ore for twelve years or over, that has resulted in an industrial efficiency which has kept the German Army supplied, despite the curtailment of German imports, and it is such farsighted plans for the keeping of American munition factories supplied which are necessary if we are going successfully to withstand foreign invasion.

I am quite aware that these proposals look to a great ex-

tion of the powers of the Government and the entry of the Government into fields which heretofore it has been considered undesirable to invade, yet I think it is necessary for the Government to consider whether it is not now necessary to enter them. The desire for peace by any nation is no longer a sufficient safeguard for it, and if this country becomes involved in war in the next few years, that war will have been lost or won by our industrial preparation during the next thirty or thirty-six months.

NEW TRADE RELATIONS DISCUSSED.

Highly Valuable Information Disseminated at International Trade Conference at New York.

[Special Correspondence Manufacturers Record.]

New York, N. Y., December 8.

The International Trade Conference, held at the Hotel Astor, under the auspices of the National Association of Manufacturers, brought together a representative assemblage of those interested in the development of world commerce. In the matter of attendance, the interest shown and the light thrown upon present conditions it was a notable success.

About 500 delegates, representing many domestic industries and representatives of several foreign nations, attended the various sessions. Many took part in the discussions of foreign trade under existing exceptional conditions and the part the United States must necessarily play henceforth in the rehabilitation and extension of the world's commercial transactions at the close of the European war.

In its discussion of national and international business problems the conference developed many phases of decided interest. It also had brought to its attention some new and pertinent facts.

Co-operating with the National Association of Manufacturers, the banking and transportation interests of the country showed their recognition of the rising importance of America's entrance into world trade. Financiers and representatives of the great railway systems took part in the work of the conference and vitalized new ideas of the task now before business America.

In both its formal and informal discussions of the manifold themes the conference was successful in putting forward the new lines along which all business interests must seek to work to get fullest success from the present unprecedented situation.

Holding aloof from discussions of governmental attitudes in the present war, but presenting clearly what the United States may aspire to because of it, there were put forward many matters of great business and financial moment. It was clearly shown that all the interests represented in the conference—manufacturing, banking and transportation—included national preparedness as one of the prerequisites for forward progress among other nations.

While divergence of opinion as to what may constitute preparedness was brought forth, the necessity for concerted national unity was patently expressed. All forces and interests seemed to agree that from now on this nation's place in world affairs will to a large degree depend upon what may be done to assure its complete preparedness for maintaining that place.

The railroad point of view on preparedness and the part that an American mercantile marine should play in securing world trade were pertinently set forth. For the railroads Vice-President George Dixon of the Pennsylvania system told why national safety in time of war and victory in the conflicts of the future must largely rest upon the ability of the inland railroads to quickly transport men and munitions, ordnance and supplies from point to point when needed. Ability on the part of the roads to do this must hinge upon their high standards of maintenance, and this, in turn, was contingent upon proper treatment by lawmakers and the public.

Mr. Dixon's graphic presentation of what the Pennsylvania system alone could offer to the nation should war come was in itself a complete exposition of how fair play for railroads adds to the national strength.

Speakers from many countries, including several of national prominence among domestic manufacturers, dwelt upon the vital importance of a merchant marine. The interest of international markets for the constantly growing surplus of American products and manufac-

tured goods imperatively demanded American bottoms was their conclusion.

Representatives of Russia, Australia, New Zealand, Norway, France, Brazil, Columbia and other nations were earnest in presenting possibilities of new or larger trade with the United States after the war. Those countries which heretofore have traded most extensively with Germany held out glowing pictures of what should be the new trade relations between their respective countries after the war. And practically everyone suggested American ships to carry on the trade.

Bankers told of what great financial institutions are doing to put the United States in the foreground. Export managers and credit men of manufacturing houses told what must be done to get foreign trade, how it must be financed and what risks Americans must assume in entering the new field.

Representatives of the Government and internationally known economic and trade authorities from universities and in private life, experts upon international law and the making of an export policy for a nation gave information and suggestions of value to the men whose products are to be sent into foreign markets.

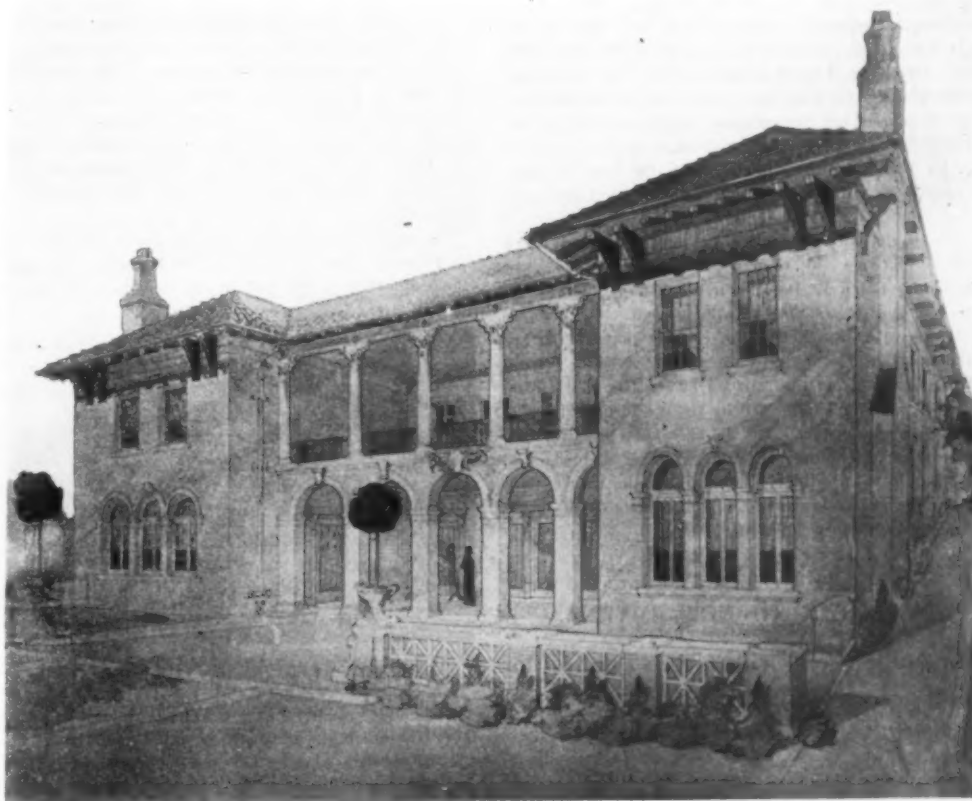
In its final summing up, the International Trade Conference put before the members of the National Association of Manufacturers information and facts as to foreign trade of tremendous value and importance.

BIDS FOR 1,000,000-BUSHEL ELEVATOR.

New Orleans Commissioners Invite Proposals for Big Grain Plant.

Proposals are invited for extensive construction in connection with the grain-handling facilities being provided by the Commissioners of the Port of New Orleans. They will be received until Dec. 29, the construction to be reinforced concrete with marine tower and about 1500 feet of conveyor galleries, all on the east bank of the Mississippi River. A deposit of \$25,000 (cash or certified check) is required with each proposal.

TYPE OF SOUTHERN CONSTRUCTION, AS SHOWN IN WOMEN'S CLUB BUILDING, RALEIGH, N. C.



ARCHITECT'S DRAWING OF BUILDING FOR WOMEN'S CLUB, RALEIGH, N. C., NOW UNDER CONSTRUCTION.

As typical of the work of construction which is occurring throughout the South, the accompanying illustration is published, showing the new building of the Women's Club, which is under construction in Raleigh.

posals. Ford, Bacon & Davis, the engineers, 921 Canal street, New Orleans, have plans and specifications on file, and will furnish full sets to bidders depositing \$100, this amount returnable to bidders submitting proposals while \$80 is returnable to bidders not submitting proposals. Bond for \$300,000 will be required from the successful bidder. Last week the Port Commissioners awarded a \$188,000 contract to Doullut & Williams, New Orleans, to build a 1350x12-foot grain elevator wharf.

Additional Laclede Steel Facilities.

Extensive increases in the products of the Laclede Steel Co. of St. Louis, mills at Madison, Ill., will be provided by the Alton (Ill.) Steel Co. plant which the Laclede corporation has purchased. This will give the Laclede management two 40-ton open-hearth furnaces, blooming mill, billet mill and hoop mill for 10 and 8 inches sizes, permitting the company to produce billets, hoops, cotton ties and open-hearth bars. At Madison the company manufactures bedstead angles, agricultural implement steel, and twisted and deformed, round and square reinforcing bars.

To Mine North Carolina Mica.

North Carolina mica will be mined by the Western North Carolina Mica Co. of Franklin, N. C., which has been incorporated by A. R. Kasson, J. W. Roper, Henry G. Robertson and others.

Choctaw Portland Cement Co.

Capitalized at \$500,000, the Choctaw Portland Cement Co. of Hartshorne, Okla., has been incorporated for the manufacture of Portland cement. The incorporators are P. G. Walker, G. C. Stebbins, L. F. Barnes and N. E. Tuell, all of Tulsa, Okla.

N. C. It will be of the Spanish Mission style of architecture, with facing of Fiske tapestry brick. R. F. Smallwood and W. H. Dancy, 569 Fifth avenue, New York city, architects.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

BALTIMORE & OHIO PLANS.

President Willard Outlines Present and Proposed Additions and Betterments.

In making personal application before the Maryland Public Service Commission for the approval of the issue of \$60,000,000 of 5 per cent. general mortgage bonds by the Baltimore & Ohio Railroad, President Daniel Willard of the company described the purpose of the new financing. He said that \$10,000,000 would be devoted to the redemption of maturing securities and that \$20,000,000 would be used for general improvements. He indicated that there is about \$10,000,000 of construction in progress, which will need about \$5,500,000 to finish, this including the new export coal pier at Curtis Bay, Baltimore, the contract for which was awarded lately and which will cost about \$1,500,000; also the reconstruction of passenger and freight facilities and the elimination of grade crossings at Pittsburgh, besides other work.

President Willard said that the Baltimore & Ohio Railroad Co. had assured the provision of pier room at a cost of \$700,000 for the accommodation of a steamship line which may be established between Baltimore and several ports in South America, plans for it now being under consideration by interests in Baltimore and elsewhere. He further stated that it had been found necessary to spend from \$10,000,000 to \$15,000,000 per year on the property of the railroad for additions to its plant, and that this betterment program was greatly exceeded during the last five years, when more than \$110,000,000 was spent for additions, betterments and equipment. As for the latter, he remarked that the company recently contracted for new equipment to cost about \$10,000,000, these orders including 3000 steel hopper cars, 50 all-steel passenger cars and 30 Mallet locomotives.

The new general mortgage, which permits the issue of a total of \$600,000,000 of bonds (this \$60,000,000 being the first issue under it), covers all the property of the railroad, including the Chicago and New York terminals, etc. Thus the bonds are secured by the whole system. President Willard intimated that if the reorganization plan for the Cincinnati, Hamilton & Dayton Railway is carried out the company would probably invest \$12,000,000 or \$14,000,000 additional in the securities of the new company, this being on the basis of self-supporting securities, and that no additional bonds or other financing would be required.

The commission approved the issue. Mr. Willard was accompanied by George M. Shriver, second vice-president; Hugh L. Bond, general counsel, and H. R. Preston, general solicitor, of the railroad.

It may also be remarked in connection with the application that the issue of the bonds has been largely oversubscribed, and the railroad officers, as well as the bankers, are highly gratified by the confidence thus displayed in the system. By the railroad company it is stated that the volume of traffic which it is now handling, while extraordinarily heavy, is being moved with ease and free from congestion. Last month the gross earnings were more than \$10,000,000.

MAYTOWN TO NEW SMYRNA.

Florida East Coast Railway Lets Contract for Important Extension.

Contract has been awarded by the Florida East Coast Railway Co. to J. M. Cook of Jacksonville to grade an extension of its Okeechobee Division northward from Maytown to a connection with the main line at New Smyrna, Fla., about 17½ miles. The bridge construction and tracklaying will be done by the railroad company's forces, and the line will be laid with raise weighing 70 pounds per yard. This and all other track material has been purchased and is on hand. The surveys have been finished, and J. H. Wycoff has been appointed resident engineer for the work, which will be

done under the general supervision of E. Ben Carter, chief engineer of the system. Total cost approximately \$200,000.

Construction of this extension has been contemplated for more than a year. It will afford a direct route north and south for trains to and from the Okeechobee line. At present it is necessary to go to Titusville, 16 miles farther south than Maytown, to make through connection between the main line and the road to Lake Okeechobee, Maytown being on the branch which runs north-west from Titusville to Enterprise Junction on the Atlantic Coast Line. From Maytown the recently constructed road runs southward to Chuluota, Kenansville, Fort Drum and Okeechobee, 122 miles. The country which it opens up is described as highly productive and is expected to settle up rapidly.

DALLAS ELECTRIC TERMINAL.

Construction of \$1,500,000 Improvement to Be Undertaken Immediately.

A report from Dallas, Tex., says that construction of the proposed interurban railway terminal station will begin immediately, according to an announcement made by Chas. F. Wallace, president of the Dallas Rapid Transit Co. The terminal will cost altogether about \$1,500,000, of which \$500,000 will be for the building; the rest will be for site, tracks, platforms, sheds and other facilities. The principal entrance will be on Jackson street between Browder street and an extension of Lane street. The structure will be eight stories high, but may be increased when necessary to eleven stories. An addition may also be built, according to the complete plans. It is intended that all the electric lines entering Dallas shall use the terminal. Chief of these are the Texas Traction Co. and the Southern Traction Co., which carry, it is stated, a total of about 3,500,000 passengers a year.

TENNESSEE SWEET POTATOES.

Two Hundred Cars of Them the Result of Co-operative Efforts.

As a direct result of co-operation among the sweet potato growers of West Tennessee, which movement was started by the Industrial Department of the Nashville, Chattanooga & St. Louis Railway Co. last year, the sweet potato crop ready for market this year is 135,000 bushels, distributed as follows: 75,000 bushels at Gleason, 45,000 bushels at McKenzie, 5000 bushels at Dresden, 5000 bushels at Jackson and 5000 bushels at Huntingdon.

The crop will amount to approximately 200 cars and the growers raised from 175 to 200 bushels to the acre, which shows that the soil in the neighborhood of the



MODERN POTATO-HOUSE, GLEASON, TENN.

towns named is peculiarly adapted to sweet potatoes. The results obtained also show what may be accomplished through co-operative efforts. Previous to forming the Federation of West Tennessee Potato Growers there had been no systematic effort to market their potato crops, and consequently the individual growers were disposing of their holdings sometimes at a loss.

Now they have erected potato houses for storage. These are modern in every particular. The potatoes are kept in bins and kiln dried, and the temperature is maintained above the freezing point.

The growers have adopted the trade-mark of the

"Forked Deer Brand," and their potatoes command good prices. The Federation is headed by W. R. Hawks of Gleason as president, and J. C. Sisser of McKenzie, Tenn., is secretary.

Of Interest to Settlers.

Land Bulletin No. 1, a pamphlet containing much information valuable to landseekers, has just been issued by the colonization department of the Missouri Pacific-Iron Mountain Railroad. The aim of the colonization department is to build up the territory traversed by the lines of the company, and the bulletin, which will be issued periodically, is for the purpose of putting in touch, at as little expense as possible, the man who is seeking land in the West, South and Southwest with the land that is obtainable and suitable for the purposes desired. It contains full descriptions of the best farming lands that are for sale in the territory served by the Missouri Pacific-Iron Mountain system.

The field men of the colonization department of the railroad keep in close touch with conditions in the country reached by the railroad, especially as regards the possibilities of locating settlers. Whenever a particularly attractive land bargain is found, it is at once reported to headquarters in St. Louis. The size of the farm, price asked, amount and condition of equipment, adaptability of the soil for the production of different crops and all other facts that might interest prospective purchasers are obtained and later appear in the Land Bulletin. Whenever an inquiry is received concerning such lands listed the owner or agent of the property and the prospective purchaser are placed in communication.

Gainesville to Waco, Tex.

The Chicago, Weatherford & Gulf Railway Co., with capital stock of \$250,000, has been chartered in Texas to build a line from Gainesville via Weatherford to Waco, Tex., about 150 miles. The company's headquarters will be in Weatherford. W. D. Stratton, president, and D. L. Decker, vice-president and general manager, are both of Middletown, N. Y. H. L. Moseley, vice-president and general attorney; G. A. Holland, treasurer, and T. R. Erwin, secretary, are all of Weatherford, Tex. The incorporators include the officials and Carter Moseley, Barney Holland, Jas. P. Owens, A. T. Collier and A. H. Russell, all of Weatherford.

Wabash Railway Organized.

Organization of the Wabash Railway Co., successor of the old Wabash Railroad Co., has been completed by the election of Wm. H. Williams, chairman of the board; E. F. Kearney, president; W. C. Maxwell, vice-president in charge of traffic; James L. Minnis, vice-president and general solicitor; J. C. Otteson, secretary; F. L. O'Leary, treasurer; Winslow S. Pierce, general counsel. The headquarters of the company will continue in St. Louis, but the offices of the chairman of the board, the secretary and the general counsel will be in New York. The executive committee is as follows: Wm. H. Williams, chairman; Winslow S. Pierce, Alvin W. Kreech, J. Horace Harding and Lyman Rhodes.

Improvements at Newport News.

Improvements will be made by the Chesapeake & Ohio Railway at its Newport News terminals. A classification yard will be built at an expense of \$100,000, and a receiving yard which will cost about \$60,000. There will also be erected a new office building to take the place of the structure which was destroyed by fire September 4. The existing depot will also be renovated and improved. Plans for the office building have been prepared, and it is expected that bids for its construction will soon be invited.

Official Changes.

John Howe Peyton, president of the Nashville, Chattanooga & St. Louis Railway, has also been elected president of the Nashville section of the Engineering Association of the South.

G. L. Candler has been appointed general superin-

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Rope Wire Wanted.

Richard Johnson, Clapham & Morris, Ltd., 24 Lever street, Manchester, England:

"We are in the market for rope wire. Washburn Wire Co., Boston; J. A. Roebling's Sons Co., New York; Page Woven Wire Fencing Co., Adrian; Spencer Wire Co., Worcester, and Prentiss Wire Mills, Holyoke, are known to us and we to them. You need not approach them. Please quote lowest prices and best terms for export delivered, stating earliest possible date (f. o. b. New York) of delivery for bright crucible steel wire; for rope-making; breaking strain 150 kilos per square millimeter.

| | 2.1 | 2.0 | 1.8 | 1.6 | 1.4 | 1.2 | 1.0 m/m |
|---|-----|-----|-----|-----|-----|-----|---------------|
| No. of torsions in 8" | 30 | 10 | 20 | 10 | 10 | 10 | 10 = 100 tons |
| lengths | 35 | 35 | 40 | 45 | 50 | 60 | 70 |
| No. of bends over radius 5 m/m through 180 degrees..... | 10 | 10 | 12 | 14 | 15 | 18 | 19 |

"Packed in coils oiled and burlapped, free. State soonest delivery. Our bankers are Brown Bros. & Co., 50 Wall street, New York, whom instruct to pay against delivery order the amount of invoice, opening at same time as placing order a credit with them in your favor. Send three sample coils of one-half pound each of the above wire in size 1.8 mm., which we require for testing purposes."

Southern Building in November.

The following figures, as compiled from reports from representative cities, present a brief summary of Southern and Southwestern building operations for November.

The cost of new improvements for which permits were issued in Baltimore is estimated at \$93,198.5, alterations \$103,420 and additions \$75,010, making a total of \$1,103,415.

In Richmond, Va., a total of 67 permits was issued for new construction to cost \$230,149 and 77 permits for alterations and repairs to cost \$45,102. As compared with November, 1914, these figures show an increase of 120,729 for new construction and \$23,884 for alterations and repairs. A total of 48 permits was issued in Norfolk, representing a cost of construction of \$138,925. As compared with the corresponding month last year these figures show an increase of 14 in the number of permits and \$74,670 in the cost of construction.

The cost of construction for which permits were issued in Asheville, N. C., during the month was estimated at \$50,361, which is in excess of the figures for November, 1914. In Winston-Salem a total of 89 permits was issued, representing a cost of construction of \$30,185, while the total for Greensboro was 19 permits, representing a cost of construction of \$30,000. As compared with figures for November, 1914, Greensboro's operations show an increase of \$5200.

Permits were issued in Columbia, S. C., for 16 new structures, estimated to cost \$142,030, and for 44 buildings to be altered or enlarged to cost \$5893. The cost of construction for which permits were issued in Greenville is estimated at \$6910, as against 10,403 for October.

November operations for Atlanta, Ga., closed with a total of \$284,644, an increase of \$52,540 as compared with the corresponding month last year. For 11 months of 1915 the total value of operations is estimated at \$4,333,147, a decrease of \$98,487 as compared with the corresponding period last year.

The cost of construction for which permits were issued in Birmingham, Ala., was estimated at \$121,904, as against \$76,710 for November, 1914.

A total of 69 permits was issued in Jacksonville, Fla., representing a cost of construction of \$106,225. These figures include \$32,875 for new frame buildings, \$60,700 for alterations to frame structures and \$12,650 for alterations to brick buildings. Permits were issued in Miami to the number of 35, representing a cost of construction of \$38,500.

November operations in Chattanooga, Tenn., show

an increase of \$58,210 as compared with the corresponding month of 1914. A total of 194 permits was issued last month, representing a cost of construction of \$191,485, as against 172 permits for November, 1914, representing a cost of construction of \$133,275.

An increase of \$94,430 is shown in operations in Louisville, Ky., for the past month as compared with November, 1914. A total of 160 permits was issued, which represents a cost of construction of \$246,030, as against 140 permits issued in the corresponding month last year, representing a cost of construction of \$151,600.

In Kansas City, Mo., a total of 206 permits was issued, representing a cost of construction of \$725,115. As compared with November, 1914, these figures show an increase of 46 in the number of permits and \$383,895 in the cost of construction. For the 11 months of 1915 a total of 3244 permits have been issued, representing a cost of construction of \$10,054,530, while a total of 3137 permits was issued during the corresponding period last year, representing a cost of construction of \$9,981,370.

Permits for permanent structures were issued in Houston, Tex., during November to cost \$179,461, and for temporary buildings to cost \$24,794. These figures show good increases over October of this year and November of last year. A total of 71 permits was issued in Fort Worth during the past month, representing a cost of construction of \$124,000, an increase of \$33,051 as compared with October. The value of construction for which permits were issued in Galveston from October 27 to November 26, inclusive, is estimated at \$101,869, while November permits for Austin numbered 42, representing a cost of construction of \$37,163. As compared with October, Austin figures show a decrease of \$12,092. The cost of construction for which permits were issued in Waco is estimated at \$13,035, as compared with \$18,375 for November, 1914.

The value of operations in Tulsa, Okla., is estimated at \$109,636, as against \$62,801 for the corresponding month last year and \$265,524 for October of this year. Permits were issued in Oklahoma City during November for construction estimated to cost \$99,765.

National Drainage Congress to Meet in January.

The sixth annual meeting of the National Drainage Congress will be held in Cairo, Ill., January 19-21, 1916. The object of this congress is to obtain National legislation for the reclaiming of swamp lands and for flood protection and related subjects.

In its work it does not endorse any special projects, but confines itself to advocating Congress to adopt a general policy to reclaim the swamp lands of the country as has been done by the reclamation of arid lands.

In connection with the meetings of the congress in Cairo, there will be held an exposition of ditching and dredging machinery and other machinery related to the drainage work.

Any information desired regarding the congress or the exposition can be obtained from George Parsons, executive committee, National Drainage Congress, Cairo, Ill.

Federal Dyestuff & Chemical Co.

The Federal Dyestuff & Chemical Co., 30 Pine street, New York, is about to close contract for the installation of a plant with daily capacity of 20 tons of chlorine and 20 tons of caustic soda at Kingsport, Tenn. It is proceeding with the construction of its Kingsport buildings (first unit 75 by 70 feet), to be equipped with machinery for manufacturing sulphur and black aniline colors. Other particulars as to the organization and plans of this \$15,000,000 corporation were stated recently by the MANUFACTURERS RECORD.

Automobile Line Proposed.

The Rapid Transit Co. of Dade county gives notice of application for a charter to operate an automobile line between Miami, Fla., and Florida City. Both passengers and freight will be conveyed. The incorporators are W. F. Skinner, president; Walter Brown, vice-president; B. Skinner, secretary and treasurer; J. B. Brown and Robert Brown. The capital stock of the company is \$10,000.

tendent of the Central of Georgia Railway, succeeding J. T. Johnson, deceased.

D. N. Bacot has been appointed superintendent of the East Carolina division of the Seaboard Air Line, with headquarters at Charleston, this division including the lines formerly known as Carolina, Atlantic & Western and Georgetown & Western.

Walter S. Franklin, Jr., has been appointed division freight agent of the Pennsylvania Railroad at Baltimore, succeeding H. A. Haines, who has been appointed division freight agent of the New Jersey and Philadelphia Terminal division of the system. Mr. Franklin was formerly the Pennsylvania's Southern freight agent at Atlanta, Ga.

Seaboard Bonds Sold.

The New York syndicate which recently bought \$20,000,000 of the new bonds of the Seaboard Air Line Railway Co. has, according to a report from that city, sold \$14,500,000 of them to the Guaranty Trust Co. and the National City Bank. They are 6 per cent, 30-year first and consolidated mortgage bonds, and they will shortly be offered to the public. It is stated that a large number of subscriptions have already been received. The remainder of the bonds will not be offered at present, but will probably be placed on the market before March 1.

Street Cars Now at Miami.

The Miami (Fla.) Traction Co. has begun operation of its street railway with a half-hour schedule. It is intended to operate on a 15-minute schedule when the paving on Avenue C is finished, which will be in a week or ten days. The cars are now operated from Twelfth street and Avenue O, in Riverside Heights, to Twelfth street and Avenue C. Track has also been laid on Avenue C from Twelfth street to Waddell street, a distance of a mile, and this, too, will soon be ready for service. The entire line is 3 1/2 miles long.

New Equipment, Etc.

Missouri, Kansas & Texas Railway is in the market for 1000 stock cars, 15 baggage cars, 4 dining-cars and 2 postal cars.

Southern Pacific lines have ordered 45,000 tons of rails from the Tennessee Coal, Iron & Railroad Co. for 1916 delivery, and more may be ordered from the same mill soon.

Missouri, Kansas & Texas Railway has ordered 15,000 tons of rails from the Illinois Steel Co., Chicago.

Missouri Pacific-Iron Mountain system has ordered 25,000 tons of rails to be rolled at Ensley, Ala.

Pennsylvania Railroad has ordered 12 combination baggage and mail cars and 6 dining-cars from the Pullman Company, Chicago.

Atchison, Topeka & Santa Fe Railway has ordered 25 more ore cars from the Pullman Company.

Chicago, Burlington & Quincy Railway has ordered 15,000 tons of 90-pound rails from the Colorado Iron & Fuel Co., Trinidad, Col.

B. F. Bush, receiver for the Missouri Pacific-Iron Mountain system, has been authorized to spend \$275,000 for improvements and equipment.

St. Louis & San Francisco Railroad receivers have been authorized to spend \$651,000 for rails and equipment.

United Railways & Electric Co. of Baltimore will equip with vestibules and improved steps 500 of its cars. New wheel guards and improved fenders will also be provided. The work is to start next spring.

Big Lumber Shipments.

Two big lumber shipments were made last week from Gulfport, Miss. They were loaded on the steamer Clossburn, which cleared for Argentina with 657,000 feet of lumber and on the Rosalie Mahoney, which cleared for Colon with 243 pieces of creosoted piling, 24,000 feet of creosoted lumber and 22,000 feet of plain lumber.

At Pensacola, Fla., the Norwegian sailing vessel Marpesia and the Russian sailing vessel Asia cleared with 51,372 crossies. These two cargoes amount to about 2,000,000 feet of lumber, and are being shipped to Clyde, Scotland.

Good Roads and Streets Durability of Brick Pavements Seen in Towns South

SOUTHERN HIGHWAY ACTIVITIES.

Record of Week's Progress in Improvements in City and Country.

Details in regard to road and street undertakings and bond issues, briefly mentioned below, are given under the proper headings in our "Construction Department" and "New Securities," published elsewhere in this issue.

Bonds Voted.

Claremore, Okla.—Rogers county voted \$238,000 bonds for road improvements in eight townships.

Gainesville, Fla.—City voted \$21,000 bonds for street paving.

Stotts City, Mo.—City voted \$13,500 bonds to construct nine miles of rock road.

Bonds to Be Voted.

Dover, Tenn.—Stewart county votes in December on \$200,000 bonds to construct roads.

Contracts Awarded.

Birmingham, Ala.—City awarded \$3937.50 contract for 6300 yards cement sidewalk and also for grading, combined curb and gutter and sidewalk paving estimated to cost \$1651.50.

Charlotte, N. C.—City awarded \$20,050 contract for 17,500 square yards of concrete sidewalks.

Denton, Tex.—City awarded contract to construct 2250 feet of concrete curb and gutter.

Fellsmere, Fla.—City awarded contract for 26,000 square feet of concrete sidewalks.

Fort Pierce, Fla.—St. Lucie county awarded contract for paving roads; \$60,000 available.

Fort Pierce, Fla.—St. Lucie county awarded contract for 4½ miles of asphalt surfacing.

Kansas City, Mo.—Park Board awarded \$25,000 contract to grade portion of Meyer Boulevard.

Okeechobee, Fla.—City awarded contract for one-half mile of cement sidewalks.

Osceola, Ark.—Mississippi county, Osceola and Little River Road Improvement District No. 1 awarded \$184,495 contract to construct 29.5 miles of concrete highway.

San Antonio, Tex.—Bexar county awarded contract to spread and maintain 18 miles of road with tarvia.

Springfield, Mo.—Greene county, Ingram Special Road District, awarded \$22,000 contract to construct 9¾ miles of road.

Contracts to Be Awarded.

Baltimore, Md.—City has new appropriation of \$1,000,000 for expenditure during 1916; has selected 17 streets; smooth paving.

Dallas, Tex.—Dallas county will construct 2800 feet of asphalt macadam roadway.

Dothan, Ala.—Houston county receives bids until December 30 to construct seven miles of road.

Florence, S. C.—City receives bids until January 11 to construct 4275 square yards of street roadway and 2½ miles of concrete sidewalk.

Pine Bluff, Ark.—Paving District No. 13 will pave about 10 blocks of Cherry street.

Rockford, Ala.—Coosa county receives bids until January 11 to grade and topsoil 4½ miles of road.

Salisbury, Md.—Wicomico county will construct 1.35 miles of State-aid highway.

Stuttgart, Ark.—City will expend \$30,000 on street paving.

Tampa, Fla.—City receives bids until December 20 to construct 112,500 square yards of asphalt block pavement and 3500 square yards of concrete pavement; concrete and granite curbing.

John W. Sibley, secretary-treasurer of the Southern Paving Brick Manufacturers' Association, Birmingham, writes the MANUFACTURERS RECORD that in making a recent trip through the South he had occasion to visit a number of cities in which brick pavements that were put down a score of years or more ago were found to be in splendid condition, and that most of them appear to be good for further years of heavy traffic. His first stop was Montgomery, where he found many miles of dependable brick streets, both in the business and residence sections. Chief among these is Dexter avenue, which leads up to the State Capitol. It was paved 22 years ago, and though there is a heavy grade, Mr. Sibley reports the pavement has withstood the test of time, no appreciable repairs being necessary and there is no indication of resurfacing being required for many years.

In commenting further on the trip, Mr. Sibley writes: "The next city visited was Atlanta, where I furnished the brick for paving South Forsyth street, which was the first instance in the South of the use of cement grout filler in the joints of brick paving. On all that part of the street where the original pavement had not been disturbed for underground improvements there was scarcely a quarter of an inch of wear on the brick during the 21 years of use. Atlanta has paved a great many other streets with brick. This year has shown an active revival in that respect, and plans are under way for more extensive operations. Fulton county, of which Atlanta is the county-seat, has built a specimen brick highway on the Lakewood Drive, which has attracted so much attention that it is pretty certain a system of such highways will be built in the near future.

"Short stops were made next at Columbus, Macon and Augusta, and then Anderson, Greenwood and Spartanburg were visited. I found brick pavements in splendid condition after constant use on heavy traffic streets for 13 to 17 years, with the universal report from the city officials that 'no repairs had been necessary on their brick streets.'

"A jump to Florida, stopping at Jacksonville, Orlando, Lake City and Pensacola, disclosed the almost incredible fact that the brick pavements laid on sand or natural soil foundations (thus eliminating the concrete base) have shown a similar record for durability and small cost of repairs. In one instance, after 17 years of use, the brick which had originally been laid with a sand filler had been recently taken up and relaid with the other side up and the joints filled with cement grout.

"My journey was then continued to Mobile, Ala., Biloxi and Gulfport, Miss., where the brick streets laid 18, 15 and 8 years ago were found to be in first-class condition, and giving such good satisfaction that more work is contemplated for the coming year. It is practically assured that the Jackson Highway along the Gulf coast will be constructed of vitrified brick.

"I was particularly proud to find in New Orleans that the Metairie road, built of brick furnished by me 20 years ago, was in almost perfect condition. A day spent in Meridian, Miss., showed that excellent brick streets laid there 17 years ago had a uniformly satisfactory record, and I returned home confirmed in the conclusion that the South is destined to be a brick-paved country, because of the old proverb that 'experience is the best teacher,' and the taxpayer will be con-

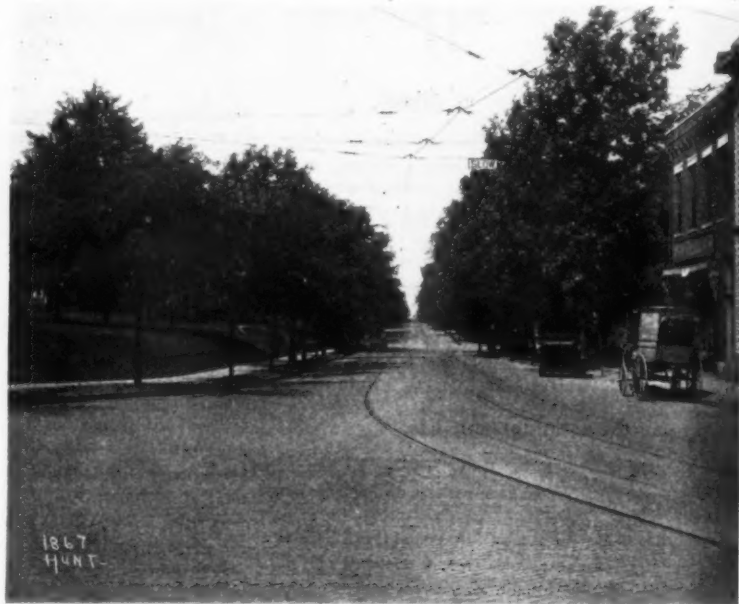
trolled largely in making his choice by the question of maintenance and repairs, and the conviction that the first cost of brick is the only cost for one generation."

American Road Builders' Convention and Exhibition.

The board of directors of the American Road Builders' Association has decided to hold its next annual convention and exhibition at Pittsburgh, February 22 to 25, 1916.

The change in the time of holding the convention from December to the first part of the year has been under consideration for several years. The change to February, it was thought, would make it more convenient for highway officials, engineers and contractors to attend.

In order that 1916 would not be without an associa-



SOUTH ELEVENTH AVENUE, BIRMINGHAM, ALA. PAVED WITH BRICK IN 1896. NO REPAIRS NEEDED TO DATE.

tion meeting, it was decided to hold it next February. The exhibition will be in the Mechanical Hall of the Exhibition Building, while the convention sessions will be held in a hall immediately adjoining.

\$1,000,000 for Baltimore Paving.

Next year the Paving Commission of Baltimore will expend \$1,000,000 for the construction of smooth streets, the amount mentioned being included in the ordinance of estimates for 1916. The Commission has selected 17 streets in various parts of the city, and will arrange for an early preparation of plans, with the intention of awarding contracts so that construction may begin when winter ends.

Big Road and Bridge Contracts.

Mississippi County, Osceola and Little River Road Improvement District No. 1, Osceola, Ark., has awarded big contracts for road and bridge construction in connection with highway improvements. These contracts are divided as follows: Arkansas Construction Co., Little Rock, at \$184,495 to build 29.5 miles of concrete highway; district to furnish cement, stone, sand and gravel; Midland Bridge Co., Kansas City, at \$7869 to build eight bridges; Vincennes (Ind.) Bridge Co., at \$5850 to build drawbridge across Little River. The county has issued \$305,000 bonds to provide funds for these improvements.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

A \$325,000 Fine Yarn Plant.

Final plans have been determined for the Climax Spinning Co.'s plant at Belmont, N. C. This mill will include a one-story 531x127-foot brick and wood building costing about \$60,000, operatives' cottages to cost about \$40,000 and machinery costing about \$225,000. J. D. Grandy, Charlotte, has the mill building contract, and most of the machinery has been purchased from the Whitin Machine Works, Whitinsville, Mass., this equipment to include 21,760 spindles for spinning fine combed yarns. Electric power will be used, the electricity to be obtained from the Belmont transmission system of the Southern Power Co., Charlotte. The Climax Spinning Co. has previously been mentioned as organized, considering plans for mill, etc. Its officers are: A. C. Linberger, president; D. E. Rhyne, vice-president; S. P. Stowe, secretary-treasurer; all experienced cotton manufacturers. R. C. Biberstein, Charlotte, is the architect and engineer.

About 1,300,000 feet of lumber, costing \$35,000, will be required in constructing the Climax mill, and will be furnished by the Spencer Lumber Co., Gastonia, N. C.

The Republic Mill No. 2.

The Republic Cotton Mills, Great Falls, S. C., will install about 52,640 spindles and 740 looms, with accompanying preparatory machinery, for No. 2 Republic mill. J. E. Sirrine, Greenville, S. C., the architect-engineer, advises the MANUFACTURERS RECORD of further details as follows:

"The mill will be electrically driven, using individual motors throughout, with exception of machines in card-room, which will be group driven. The building will be a modern reinforced concrete, 400x133 feet, three stories high. The warehouse will be 175x100 feet, two stories high, having storage capacity for 3000 bales of cotton. There will be a steam plant for heating and slashing and a 250,000-gallon reservoir for fire protection. The buildings will be equipped with fire protective system, humidifier, heating, etc. Contracts have

been let for the erection of 80 tenement-houses."

The Republic company recently announced its increase of capital by \$600,000 to build an additional mill with complete accompanying facilities, Mr. Sirrine being the architect-engineer in charge.

To Manufacture Palmetto Fiber Rugs.

The Palmetto Products Co., New York, has determined details of its plans for manufacturing in Florida. It will establish its main plant at Jacksonville, this to include an equipment of three looms, shredding and spinning machine, sewing machines, dyeing and stenciling outfits, individual electric motor drive, etc. This installation is to be increased by 30 looms and accompanying machinery. First unit is to have a weekly capacity of 4000 square yards palmetto fiber rugs, and an ultimate annual capacity of from 3,000,000 to 4,000,000 square yards is proposed. In 10 plants on the east coast and on the St. John's River will be installed 100 spinning and shredding machines, to spin fiber and ship twine on reels to Jacksonville. Nine spinning and shredding machines will be installed in a building under construction at Titusville, where the company was originally reported as to establish its plant.

To Install 374 Looms.

About \$75,000 will be expended by the Eagle & Phenix Mills, Columbus, Ga., to install 374 automatic looms replacing 378 old looms. This new weaving machinery will have daily capacity of 20,000 yards of cotton cloth. It has been ordered from the Draper Company, Hopedale, Mass., and the Crompton & Knowles Loom Works, Worcester, Mass.

To Equip With 15,000 Spindles.

An equipment of 15,000 spindles and accompanying machinery has been decided upon for the mill which G. H. Miller of Chattanooga, A. G. Thatcher of Philadelphia and associates will build at Chattanooga. The estimated cost is \$250,000, and the product will be yarn from Sea Island cotton.

Textile Notes.

Howell Manufacturing Co., Cherryville, N. C., will double its machinery, increasing to a 5000-spindle equipment.

T. D. Miller, J. W. Kaneer and associates, Statesville, N. C., will build mill to spin knitting yarns for the sweater, underwear and hosiery trade, the weekly

production to be 30,000 pounds. They have awarded machinery contracts and will construct building next spring.

Woodruff (S. C.) Cotton Mills will build 124x80-foot extension and install 1800 spindles, with accompanying equipment.

Muscogee Manufacturing Co., Columbus, Ga., is reported to enlarge mill at a cost of several hundred thousand dollars, J. E. Sirrine of Greenville, S. C., being the architect and engineer in charge.

Rome (Ga.) Hosiery Mills will build 100x36-foot addition and install machinery for the production of aniline or oxydized black hosiery. This equipment has been ordered.

German-American Mills (Thread Mills Co., proprietor, Monticello, Ind.), Draper N. C., will add 75 looms for weaving blankets, and this machinery has been ordered. An additional building will be constructed.

Little Rock (Ark.) Pickery & Spinning Co., capital \$25,000, has been incorporated to build plant for cotton linters. Officers as follows: C. C. Cavanaugh, president; Geo. C. McCardell, treasurer; J. N. McNamara, superintendent.

The Sand Springs (Okla.) Cotton Mill, capital stock \$500,000, will be organized by Chas. Page and associates, recently mentioned as planning to build a mill. Its buildings will be of glass and steel construction, costing \$200,000, while the machinery will be driven by electric power. Cloe Tingley of Sand Springs is the engineer and D. Eichenfeld of Tulsa is the architect.

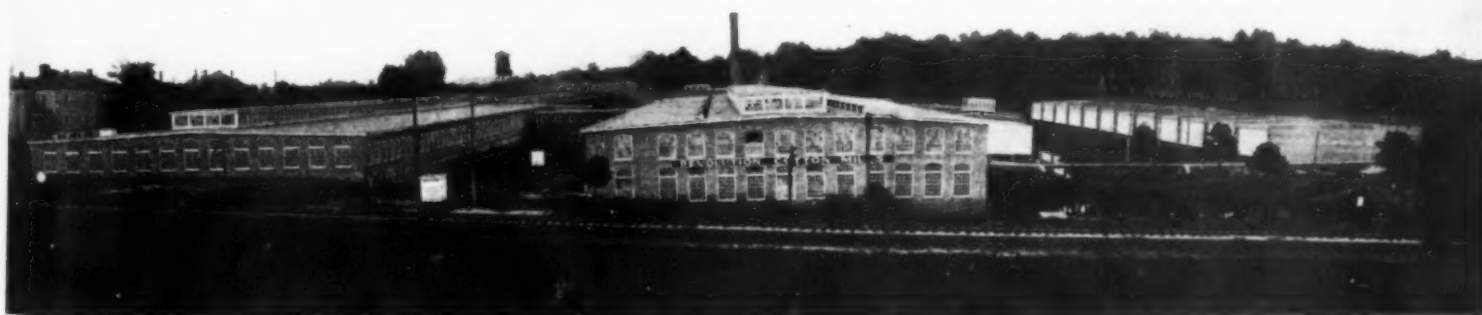
B. H. Merck, Gainesville, Ga., expects to buy two-story 75x25-foot brick building for his knitting mill recently reported to be established. Initial installation will be 25 knitting machines and five horse-power electric motor, with belt drive, for daily capacity of 100 dozen pairs of hose. Employees will number 25.

Eastern Mills Co., Hope, Mills, N. C., has been incorporated with \$500,000 capitalization and will succeed the Hope Mills Manufacturing Co., recently reported purchased by W. J. Beattie of Hope Mills and associates. Mr. Beattie is manager and John F. McNair of Laurinburg, N. C., is president of the new company. R. C. Biberstein, architect and engineer, Charlotte, has been engaged to plan building repairs and install new machinery.

To Develop Virginia Lead and Zinc.

Lead and zinc properties in Virginia are to be developed by the Virginia Lead & Zinc Corporation of Richmond. This company has been incorporated with a maximum capital of \$800,000, and its officers are as follows: Andrew Christian, president; Dean Maury, treasurer; H. H. Chalkley, secretary.

A \$1,000,000 COTTON MANUFACTORY—REVOLUTION COTTON MILLS NOW COMPLETING BIG ADDITIONS TO FACILITIES AT GREENSBORO.



REVOLUTION COTTON MILLS, A \$1,000,000 PLANT AT GREENSBORO, N. C.

Approximately \$1,000,000 will be invested in the Revolution Cotton Mills, Greensboro, N. C., when the company completes the big additions (heretofore detailed) now being equipped with machinery. (See accompanying photographic view of the plant.) The additional buildings include a two and three-story 1500x130-foot and a two-story 1200x130-foot, of brick and steel construction, reinforced with concrete. These structures are lighted by electricity and ventilated with an automatic system costing \$20,000. Another new

building is a five-story 100x100-foot fireproof reinforced concrete warehouse with capacity 10,000 bales of cotton, this structure costing \$50,000. Upon completing the additional machinery installations the company will have added 70,000 spindles and 2000 looms, which will increase its operatives from 700 to 1500 and its monthly payroll from \$18,000 to \$37,000. Within the past several months the company has provided the necessary equipment for dyeing all its cotton cloth, this product having heretofore been shipped to Eastern dye-

ing plants. The general facilities of the Revolution company include model cottages, water supply, electric lighting, sewer system, schools, churches, banks, etc. This plant began manufacturing in September, 1899, with 400 employees and a capital of \$300,000. It was almost doubled in 1902, when the employees were increased to 700, 100 cottages were erected for operatives and a complement of 31,000 spindles and 820 looms was reached. In 1914 the management decided upon the enlargement now approaching completion.

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ark., Osceola.—Mississippi county, Osceola and Little River Road Improvement Dist. No. 1 (R. C. Rose and others, Comms.) let contract Midland Bridge Co. of Kansas City, Mo., at \$7869 to construct 8 bridges, and Vincennes Bridge Co., Vincennes, Ind., at \$5850 to construct drawbridge across Little River. (See Road and Street Work.)

Ky., Louisville.—Louisville Bridge Co. (Pennsylvania R. R.), Chas. H. Gibson, Prest., will construct double-track bridge across Ohio River between Louisville and Jeffersonville, Ind.; has not determined any details nor when will begin construction; probably expend \$1,000,000. (Previously mentioned.)

Ky., Major.—Hermann Laub, Consult. Engineer, Keystone Bldg., Pittsburgh, Pa., has made first investigations for construction bridge across Ohio River to Kentucky shore; at locations near Major and Evansville, Ind.; bridge for steam railway, electric cars and vehicles; unconfirmed report states this bridge proposed by Illinois Central Ry., A. S. Baldwin, Ch. Engr., Chicago, or Chicago & Eastern R. R., L. C. Hartley, Ch. Engr., Chicago.

Miss., Columbus.—Lowndes County Supvs. let contract H. C. Terry of Columbus to construct 100-ft. steel bridge with concrete floor and concrete culvert; C. L. Wood, County Bridge Engr. (Call for bids noted in Oct.)

Mo., Kansas City.—City let contract H. H. Hannenkratt at about \$65,000 to construct reinforced concrete viaduct at 77th St.

Mo., Mt. Vernon.—Lawrence County Comms. authorized construction of 2 bridges in Turnback township, east of Mt. Vernon.

N. C., Bryson City.—Swain County Highway Commission will construct 4 40-ft.-span and 1 300-ft. concrete bridges; bids until Dec. 20; T. M. Howerton, Engr., Bryson City. (See Machinery Wanted—Bridges (Concrete).)

Okla., Miami.—Ottawa County Comms. let contract Concrete Steel & Construction Co. of Joplin, Mo., at \$4240.10 to construct 5 bridges.

Tenn., Knoxville.—City Com. will consider issuance of \$125,000 viaduct bonds; John E. McMillan, Mayor.

Tex., Dallas.—Northern Texas Traction Co.,

will construct viaduct across railway tracks leading into proposed railway union station.

Tex., Harrisburg.—Harris County Commissioners, Houston, Tex., opened bids to construct bridge at Harrisburg; Horton & Horton of Houston are lowest bidders at \$19,960.

Tex., Marshall.—City voted \$50,000 bonds to construct viaduct over Texas & Pacific Ry.'s tracks between North and South Marshall. Address City Comms. (Lately noted.)

Va., Portsmouth.—City will construct concrete-box culvert on Dinwiddie St. crossing of Gander Creek; Street Committee, S. Cleburne Brown, Chrmn., receives bids until Dec. 13. (See Machinery Wanted—Culvert Construction.)

CANNING AND PACKING PLANTS

Ala., Montgomery.—Farmers and Merchants' Produce Exchange will be inceptd. by Leo Strassburger of Schloss & Kahn Grocery Co. and others; later contemplates erecting cannery to can primarily sweet potatoes. (See Ice and Cold-Storage Plants.)

Ga., Barnett.—Southeastern Cattle Co. will establish plant for producing green and cured meats, fertilizers, etc.; open machinery bids in March; lately noted. (See Miscellaneous Enterprises. See Machinery Wanted—Packing Equipment.)

Tenn., Bristol.—G. L. Aronhime will build packing plant and abattoir; purchased site containing several acres; let contracts for machinery.

Tex., Dallas.—Armstrong Packing Co. increased capital from \$500,000 to \$650,000.

CLAYWORKING PLANTS

Ark., Hope.—Bricks.—Hope Brick Works, N. P. O'Neal, Mgr., will build lately noted brick-kiln; cost \$20,000; plans not decided.

Va., Staunton.—Bricks.—Staunton Brick Co., capital \$50,000, inceptd.; A. T. Smiley, Prest.; W. A. Payne, Secy.-Treas.; let contract to J. H. Houck, Bristol, Tenn., at \$30,000 to construct and equip plant, contract not including kilns; 60x70-ft. ordinary construction building; A. G. Wagner, Bristol, Tenn., in charge construction; electrically-operated machinery; daily capacity 30,000 bricks. (Lately noted.)

COAL MINES AND COKE OVENS

Ala., Blocton.—Coyle Coal Co., J. B. Coyle, Prest., Birmingham, Ala., will open 5 additional coal mines in Bibb county; also reported to develop 5000 acres iron-ore land in Jefferson county.

Ky., Pineville.—White Star Coal Co., capital \$120,000, inceptd. by J. L. Phillips, R. B. Moss, M. J. Moss, Jr., W. L. Moss and others; secured lease coal acreage on Wallins Creek seam in Harlan county and will operate this mine over present tipple of Moss & Sons Coal Co. at Wilhoit, Ky.; Kentucky Harlan Fuel Co., owning lease, and Moss & Sons Coal Co., operating under lease, will be consolidated with White Star Coal Co.

Md., Lonaconing.—Georges Creek Coal Co. will install electrical equipment for coal mining.

Tenn., Etna (not a P. O.).—New Etna Coal Co., Chattanooga, Tenn., contemplates developing coal mines from Tennessee River side of mountain in which coal veins are located; plans to operate barges to transport coal to market; mine opening about 1600 ft. from river; from opening coal will probably be hauled along trestle track to tipple at water's edge; mines previously opened from other side of mountain.

Tenn., Nashville.—Tennessee Prospecting Co., capital \$10,000, inceptd. by A. H. Robinson, H. A. Coyte, D. B. Carson and others; will prospect for coal, copper, lead, zinc, mica, etc.

W. Va., Baxter.—Stafford Coal Co., 505 Maryland Trust Bldg., Baltimore, Md., acquired West Virginia property of New Central Coal Co. of New York, consisting of 1200 acres coal lands, 150 acres surface land, 125 houses, machinery, mine, store, etc.; mine has daily capacity of 1300 tons coal; new owner plans increase to 2000 tons; C. L. Shaver, Fairmont, W. Va., Prest.; E. P. Keech, Jr., V.-P.; John J. Sheehan, Secy.-Treas.; Harry B. Clark, Fairmont, Mgr.; C. C. Moritt, Supt., Baxter; lately noted inceptd., under W. Va., Fairmont, with \$3000 capital. (See Machinery Wanted—Boilers; Air Compressors; Cars; Stokers.)

W. Va., Charleston.—DeWitt Fuel Co., capital \$25,000, inceptd. by P. N., Ethel S. and Lana C. Snyder and others.

W. Va., Farmington.—C. D. Robinson of Fairmont, W. Va., acquired T. B. Davis mine at Farmington, including 200 acres coal lands, mine plants, machinery and dwellings; now has daily capacity of 500 tons; will install electric haulage system to increase daily capacity to 1000 tons.

W. Va., Gary.—United States Coal & Coke Co. will fire 1700 coke ovens; daily production 2500 tons coke; also will begin operating at full capacity its coal mines, monthly output to be 350,000 tons; will reopen east side of No. 9 mine, which loads coal by air equipment.

W. Va., Tralee.—Barkers Creek Coal Co. (lately noted inceptd., capital \$15,000) organized; J. E. Tolliver, Prest.; R. S. Sutherland, V.-P. and Secy.; J. C. Sullivan, Treas.-Mgr.; acquired plant of Cooper-Pocahontas Coal Co.; develop 1500 acres; daily capacity to be 1500 tons; machinery supplied.

W. Va., War.—Williams Pocahontas Coal Co. will develop 450 acres; F. W. Truscott, Prest.; Geo. Morrow, Huntington, V.-P.; Robt. L. Page, Berwind, Secy.-Treas.; W. T. Williams, Mgr.

CONCRETE AND CEMENT PLANTS

Okla., Hartshorne.—Portland Cement.—Choctaw Portland Cement Co., capitalization \$500,000, inceptd. by P. G. Walker (Box 1005), G. C. Stebbins, L. F. Barnes and N. E. Tuell, all of Tulsa, Okla.; to manufacture Portland cement.

Va., Norfolk.—Roofing.—Cementile Roofing Corp., 19th St. and Williams Ave., capital \$15,000, chartered; R. C. Cottam, 502 Dickson Bldg., Prest.; Guy Webb, V.-P.; J. P. Williams, Secy.; let contract to G. F. Wilkinson & Co., Arcade Bldg., Norfolk, to erect 32x100-ft. 1-story semi-fireproof building; will install low-pressure steam boiler and steam piping; manufacture cementile roofing material. (See Machinery Wanted—Boiler; Piping.)

COTTON COMPRESSES AND GINS

Ark., Forest City.—Forest City Compress Co. increased capital from \$30,000 to \$45,000.

Ga., Atlanta.—Atlanta Warehouse & Compressing Co., Arthur Tufts, Engr., 551 Candler Annex, progressing with construction cotton warehouse and compressing plant; has awarded all contracts; ordered compress equipment from Webb Press Co., Minden, La.; 24 hr. compress capacity is 300 bales, planned for increase to 600 bales; buildings of reinforced concrete fireproof construction; estimated total expenditure \$1,000,000. (Previously reported organized to build compress, letting contracts, etc.)

COTTONSEED-OIL MILLS

Miss., Sumner.—Sumner Oil Mill, capital \$125,000, inceptd. by W. M. Simpson, W. A. McMullen, R. L. Watt and others.

Tex., Jacksonville.—Jacksonville Cotton Oil Co. increased capital from \$50,000 to \$100,000.

Tex., Lockhart.—Lockhart Oil Mill (controlled by D. M. Day) will rebuild plant lately noted burned at estimated loss of \$40,000.

DRAINAGE SYSTEMS

Fla., Largo.—Lake Largo Cross Bayou Drainage Dist., F. R. Francke, Prest., will soon advertise bids to construct lately noted drainage system; 57 mi. 2 sea-level canals; floating dredge 7000, balance dry land dredge; drain 13,127 acres, Pinellas peninsula, for citrus lands and agriculture.

Ky., Morganfield.—Drainage Comms., Union County, Geo. T. Higginson, Jr., Secy., will construct Dennis O'Nan Public Ditch; 13 mi. open ditch; about 670,000 cu. yds. excavation; Norman R. Oreutt, Ch. Engr., Morganfield; previously described. (See Machinery Wanted—Drainage.)

Ky., Morganfield.—Dennis O'Nan Drainage Ditch bids are asked until Dec. 30 by Board Drainage Comms., Union county, Geo. G. Higginson, Jr., Secy.; 13 mi. open ditch; about 670,000 cu. yds. excavation; Norman R. Oreutt, Ch. Engr., Morganfield; described in July. (See Machinery Wanted—Drainage.)

N. C., Mooresville.—Davidson Creek Drainage Dist., Iredell county, will construct drainage improvements; Drainage Comms. receive bids at office Zeb V. Turlington until Dec. 15; J. A. Black and others, Creek Comms. (See Machinery Wanted—Drainage.)

ELECTRIC PLANTS

Ark., Hartford.—City contemplates constructing electric-light plant. Address The Mayor.

Fla., Lake Worth.—City will issue \$15,000 bonds for electric-light plant. Address The Mayor.

Fla., St. Petersburg.—City votes Dec. 7 on granting franchise to Pinellas Electric Light & Power Co. for electric-light system.

Ga., Coolidge.—City let contract W. Hopson Goodloe, American National Bank Bldg., Macon, Ga., to construct electric-light system; \$4500 available; Mr. Goodloe is engineer; G. T. Kight, Mayor. (Noted in September.)

Ky., Hazard.—Kentucky River Power Co., R. L. Cornell, Mgr.-Engr., Hazard, completed surveys and preliminary work for \$300,000 electric plant; begin construction next spring; building with brick walls, steel framing, concrete foundations, floors and roof; install 2000 H. P. steam turbine with two 500 H. P. boilers fired by automatic stokers; ample space for additional equipment when required; begun installation 750 H. P. (increasing to 1250 H. P.) unit at Glomaw plant to furnish electricity until above plant is completed; soon complete 15 mi. transmission system; has long-term contracts to furnish electricity to 9 coal-mining companies. (Previously mentioned to build \$300,000 plant with concrete and steel building, 15 mi. transmission system, etc.)

Ky., Mt. Olivet.—Mt. Olivet Light & Power Co., W. S. Chandler, Mgr., will open construction bids (now out) about Jan. 1 to construct lately noted electric-light plant; develop about 40 H. P. (See Machinery Wanted—Electric-plant Equipment.)

La., Church Point.—City contemplates voting on bonds to construct electric-light plant and water-works. Address The Mayor.

La., Crowley.—City will issue \$35,000 electric-light and water-works bonds. R. J. Boudreaux, City Clerk.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Mo., Branson.—Branson Light & Power Co., C. C. Bradshaw, Mgr., will install electric-light plant lately noted; installation in ice-plant building of Larson-Myers Co.; construct 2 mi. transmission line to Hollister, Mo.; voltage 2300; first installation 100 K. V. A.; will receive bids; commence construction of distribution lines by Jan. 1. (See Machinery Wanted—Electric-plant Equipment.)

Mo., Hollister.—Branson Light & Power Co., C. C. Bradshaw, Mgr., Branson, Mo., will extend electric transmission line to Hollister. (See Mo., Branson.)

Mo., Kirksville.—Adair County Light, Power & Ice Co., capital \$10,000, incptd. by Harry M. Still, John C. Mills and Chas. V. Miller.

X. C., Granite Falls.—City let contract to Comstock Electric Co., High Point, N. C., to install lately-noted plant; cost \$4000; machinery purchased (equipment from General Electric Co., Schenectady, N. Y.; supplies, Southern Electric Co., Baltimore); street and incandescent lighting system; power from Granite Falls Mfg. Co. (Lately noted.)

X. C., Newbern.—Brighton Light & Power Co., capital \$25,000, incptd. by J. C. Irving, J. V. Blades, Emma D. Blades and others.

X. C., Zebulon.—City, E. C. Daniels, Mayor, will expend \$10,000 to install lately-noted lighting system; crude-oil plant, single-phase 2300-volt Pri. and 110-volt 2-wire Sec.; wooden-pole line series incandescent street lighting; 60 cycle; develop 100 H. P.; Comstock Electric Co., High Point, N. C., lately noted to prepare plans. (See Machinery Wanted—Electric-plant Equipment.)

Okla., Galtrey.—City will vote Dec. 21 on bonds for lately-noted electric-light and telephone system; plans by W. L. Benham, Consulting Engr., Oklahoma City.

Okla., Laboma.—City issued \$6000 bonds to construct electric-light plant. Address The Mayor. (Noted in October.)

Tenn., Ooltewah.—Ooltewah Construction & Improvement Co., S. F. Moss, Riceville, Tenn., Prest., and W. Hall Moss, Mgr., will install 75-K.W. transformer system for city lighting and power; electricity supplied by Tennessee Power Co. (See Machinery Wanted—Electric-plant Equipment.)

Tenn., Knoxville.—City, John E. McMillan, Mayor, asks bids until Dec. 31 to furnish not less than 600 arc lights and light city buildings. (See Machinery Wanted—Electric-light Plant.)

W. Va., Wellsburg.—American Gas & Electric Co., 39 Church St., New York, will organize company to build electric plant; initial expenditure \$2,500,000; initial installation 60,000 K. W., with provision for ultimate development 180,000 K. W.; buildings of fireproof construction; Foundation Co. of New York in charge of construction; Sargent & Lundy, Chicago, Const. Engrs. in charge; plant location, on Ohio River and Pennsylvania R. R. near Wellsburg; American corporation contracted with Richmond Coal Co., Wheeling, for entire coal supply for 50 years from Beech Bottom mine, near Wellsburg.

FERTILIZER FACTORIES

Md., Baltimore.—Standard Guano Co., 1515 Continental Bldg., let contract Richmond Structural Steel Co. of Richmond, Va., to build acid plant and to D. J. Rose of Rocky Mount, N. C., to build power-house; annual capacity of plant 100,000 tons; estimated cost \$60,000; plans by P. C. Gilchrist of Charlotte, N. C. (Noted in August.)

S. C., North Augusta.—North Augusta Fertilizer & Warehouse Co., Augusta, Ga., rebuilding burned plant; new building to be of concrete, 200x125 ft., with capacity 5000 tons materials or mixed fertilizer; estimated cost \$10,000. (Noted in September.)

FLOUR, FEED AND MEAL MILLS

Ala., Luverne.—Crenshaw County Gin Co. let contract to Alabama Machinery & Supply Co., Montgomery, Ala., for equipment, cost about \$2500, for complete 10-ton stock-feed grinding and mixing plant; installation by day labor. (Lately noted.)

Ga., Lawrenceville.—R. S. Sammon will build merchant roller flour mill; 3 stories.

La., Lake Charles.—Village Mills Co. will rebuild burned plant.

N. C., Albemarle.—Albemarle Milling Co., capital \$25,000, incptd. by H. L. Lowder, J. M. Morrow and A. C. Heath; has let machinery contract to Robinson Mfg. Co., Muncy, Pa. (Previously noted to build mill with daily capacity 115 bbls. flour, 500 bu. corn

meal and 24 tons feed; also lately incorrectly noted under "Sallsbury.")

N. C., Hendersonville.—Hendersonville Milling Co. organized by John T. Wilkins and others; will manufacture meal and stock feed.

Okla., El Reno.—El Reno Mill & Elevator Co. will build addition to mill; daily capacity, 1000 bbls. flour.

Tenn., Waverly.—Company organized with L. W. Slayden, Prest.; Alvin Sanders, V.-P.; J. D. Porch, Mgr.; acquired old Hopkins mill; installed corn sheller and will make other improvements.

Tex., Paris.—Paris Milling Co. will commence rebuilding of mill (lately noted burned) as soon as wreckage is removed; probably concrete structure, capacity about 350 bbls.; plans not yet drawn; contract will be let by J. C. Hawley, Gainesville, Tex.

Va., Greenville.—H. O. Campbell will rebuild flour mill reported burned at loss of \$10,000 to \$15,000.

Va., Norfolk.—Norfolk Feed Milling Co., capital \$25,000, incptd. by Benj. F. Metzger, Prest.; W. J. Cote, V.-P.; Nathan Metzger, Secy.-Treas.

FOUNDRY AND MACHINE PLANTS

Ala., Anniston.—Explosive Shells, etc.—Anniston Ordnance Co., capitalized at \$500,000, incptd.; supercedes Southern Munitions Corp.; following officers: Prest., Jas. Mitchell, Prest. Alabama Power Co., 120 Broadway, New York, and Birmingham, Ala.; V.-P., Theodore Swann of New York; directors include Maj. John S. Sewell, Anniston, and R. I. Ingalls of Ingalls Iron Works, Birmingham; now equipping buildings (of Anniston Car Works) to manufacture explosive shells, high-grade electric furnace steel, etc.; ordered 6-ton Heroult electric furnace costing \$60,000; expend total of \$100,000 for improvements; has initial contract for 50,000 shells for English Army. (Other facts lately mentioned.)

Ala., Birmingham.—Brake Shoes.—Safety Brake Shoe & Mfg. Co., capital \$30,000, organized by W. L. Allen of Montgomery and others; will build plant to manufacture steel back brake shoe; probably erect brick bldg.

Fla., Okeechobee.—Machine Shop.—J. T. Hamilton of West Palm Beach, Fla., will erect building, 20x40 ft., and equip as machine shop; install 6000-lb. lathe and other equipment.

Mo., Kansas City.—Laundry Machinery and Supplies.—R. W. Yates Laundry Machinery & Supply Co., capital \$10,000, incptd. by Richard W. Yates, Cora W. Yates and Harry T. Mayes.

Mo., St. Louis.—Cloth-laying Machinery.—Cutler-Schneider Machine Co., capital \$2500, incptd. by Jas. H. Cutler, Chas. G. Schneider and Ida Hackemeier.

S. C., Belton.—Adjustable Bearings.—Company organized with \$25,000 capital to manufacture Day adjustable bearings used on cotton-mill looms; S. H. McGee, Prest.; L. W. Stansell, Secy.; both of Greenwood; C. F. Cox, V.-P.; F. M. Cox, Mgr.; both of Belton; erect plant; A. Y. Shirley in charge.

Tenn., Clarksville.—Iron Works.—Red River Iron Works, capital \$40,000, incptd. by Graham Macfarlane, H. N. Leech, M. S. Macfarlane and others.

GAS AND OIL ENTERPRISES

Ark., Crawford County.—Clear Creek Oil & Gas Co., Fort Smith, Ark. (noted in May and recently), has increased capital stock from \$30,000 to \$50,000; holds leases on 27,000 acres; drilled test well 2300 ft.; expects to drill 5 additional wells within next 60 days; lets drilling contracts; no machinery needed; later may install pipe line.

Ark., Fort Smith.—Wildcat Oil Co., capital \$50,000, incptd. to drill for oil and gas in Crawford county; W. R. Martin, Prest.; Harry P. Lyman, V.-P.; Tom L. Dally, Secy.; W. J. Echols, Treas.

Ark., Kibler.—Clear Creek Oil & Gas Co. of Fort Smith, Ark., will increase capital from \$30,000 to \$50,000; undertake additional development.

La., Shreveport.—Prosper Oil & Gas Co., capital \$25,000, incptd. by W. H. Booth, Prest.; C. D. Keen, V.-P.; J. P. Evans, Secy.-Treas.

Md., Baltimore.—Oil Storage.—Wm. C. Robinson & Son Co., 32 South St., will erect oil-storage tanks on recently-acquired property adjoining wharf at foot of Caroline St.; plans by company engineer; contract not let.

Md., Baltimore.—Natural-gas Supply.—P. G. Gossler, V.-P. Columbia Gas & Electric Co., New York, is quoted as stating his cor-

poration will construct natural-gas pipe line from West Virginia fields to Baltimore; rumors state will invest \$10,000,000; now supplying West Virginia gas to Cincinnati, Cleveland and other cities; A. B. Leach & Co., 149 Broadway, New York, A. B. Leach being Prest., Columbia corporation, wires Manufacturers Record: "Consolidated Gas Co. of Baltimore has received from us definite propositions to sell them natural gas for distribution; we are awaiting their reply." (Previously reported planning pipe lines to Baltimore, etc.)

Mo., Kansas City.—Southern Oil & Gas Co., capital \$5000, incptd. by Walter L. Lampkin, Baylis Steele and Fred H. Wood.

Okla., Ardmore.—Gas Pipe Line.—City, Val Mullen, Mayor, will consider lately-noted proposition to issue \$150,000 bonds for gas-pipe line; about 30 mi. contemplated; J. H. Corlock, City Engineer. (See Machinery Wanted—Pipe.)

Okla., Ardmore.—Oil Well Drilling Co., capital \$10,000, incptd. by Buena Perkins, W. A. Thompson and J. D. Adkins.

Okla., Blackwell.—Planet Oil Co., capital \$50,000, incptd. by W. E. Wisberg of Blackwell, J. J. Brown, Jr., of Tulsa, Okla., and W. H. England of Ponca City, Okla.

Okla., Muskogee.—Ora Oil & Gas Co., capital \$10,000, incptd. by Geo. W. McClain of Muskogee, Geo. L. Kellit, Oklahoma City, and M. Brown, San Antonio, Tex.

Okla., Muskogee.—Eureka Drilling Co., capital \$25,000, incptd. by Geo. W. McClain of Muskogee, Geo. L. Kelly of Oklahoma City, Okla., and M. Brown, San Antonio, Tex.

Okla., Oklahoma City.—T S Oil & Gas Co., capital \$5000, incptd. by G. A. Nichols, M. E. Reynolds, A. M. Nichols and H. N. Boardman.

Okla., Oklahoma City.—Kay Oil Co., capital \$50,000, incptd. by Jas. R. Armstrong, J. R. Keaton, John W. Choate and others.

Okla., Stillwater.—City voted to grant gas franchise to Stillwater-Pawnee Gas Co., S. P. Renter, Prest. (Lately noted.)

Okla., Tulsa.—Keno Oil Co., capital \$25,000, incptd. by C. R. Lynch, S. D. Hawley and J. F. Jerome.

Okla., Wewoka.—Igo Oil & Gas Co., capital \$60,000, incptd. by W. B. B. Smith, J. Caddy Johnson, C. E. Corbett and Ed. Cox.

Tex., Brenham.—Lehmann Oil Co., capital \$12,000, incptd. by D. C. Giddings, R. P. Thompson, Otto Baumgart and others; Joe Howell has contract to drill well.

Tex., Houston.—Southern Petroleum Co. increased capital from \$10,000 to \$100,000.

Tex., La Grange.—Buckner's Creek Oil & Gas Co., capital \$20,000, incptd. by Geo. H. Cooke, C. D. Krause and C. H. Steinman.

Tex., San Antonio.—Nixon-Arnel Oil Co., capital \$25,000, incptd. by A. F. Arnel, Mrs. J. T. Nixon and C. J. Hutchings.

W. Va., Mount Hope.—Fayette Oil & Gas Co., capital \$50,000, incptd. by W. E. Deegan of Mount Hope, M. M. Malcolm, A. B. Abbott and others of Fayetteville, W. Va.

W. Va., Pennsboro.—Monford Oil & Gas Co., capital \$50,000, incptd. by Grover Collins, I. L. Fordyce and others.

ICE AND COLD-STORAGE PLANTS

Ala., Montgomery.—Richard Tillis will build ice plant; cost \$3800; Jeffers Bros. contractors, Montgomery.

Ala., Montgomery.—Farmers and Merchants' Produce Exchange, capital \$10,000 to \$20,000, will be incptd. by Leo Strassburger of Schloss & Kahn Grocery Co. and others; will build cold-storage plant and lease warehouse; later contemplates erecting cannery to can primarily sweet potatoes.

Ark., Jonesboro.—Jonesboro Ice Co., Main St., will erect lately-noted ice plant; reinforced concrete; 23 ft. 6 in. by 107 ft.; install elevator; plans by T. Edison Mitchell, Jonesboro.

Fla., Tampa.—Consumers' Ice Co. let contract to McGucken & Hyer, Tampa, to erect 90x30-ft. cold-storage building; cost \$27,000; reinforced concrete structure; composition roofing; cement floor.

Ga., Barnett.—Southeastern Cattle Co. will install lately-noted ice plant. (See Miscellaneous Enterprises.)

Ky., Carlisle.—Carlisle Electric Light & Ice Co. let contract R. O. Duncan, Carlisle, to construct building for ice plant; daily capacity 20 tons; awarded machinery contract to Henry Vogt Machine Co., Louisville. (Recently reported increasing capital from \$15,000 to \$30,000 to build ice plant, etc.)

La., Lockport.—Lockport Ice Co. organized to establish ice factory; J. M. Summerhill, New Orleans, is interested. (Noted in September.)

Mo., St. Louis.—Booth Fisheries Co. of Chicago purchased property of Mississippi Valley Warehouse Co.; 280 ft. on Ashley St., with 6-story steel building, 136 ft. on Main St. improved with 12-story building and frontage of 136 ft. on Lewis St.; also has other 1 and 2 story buildings; has plans (by its construction and engineering department) to remodel property; continue to operate portion of building for handling dry and common storage; convert remainder into cold-storage plant; install refrigerating machinery, insulate and pipe present structure and erect additional buildings; when completed will have 3,000,000 cu. ft. space for cold-storage, truckage facilities on basement floor for 50 to 60 cars daily, loading platform, elevators and loading platforms; soon submit plans to contractors for bids.

N. C., Forest City.—Farmers' Co-operative Creamery, B. H. Bridges, Secy.-Treas., will probably install ice plant. (See Miscellaneous Factories.)

Okla., McAlester.—McAlester Ice & Pure Food Products Co., capital \$5000, incptd. by Courson H. King, Jr., McAlester; A. C. Murray, Clarksville, Tenn., and W. M. Busted of Memphis, Tenn.; will build plant. (Mr. Murray lately noted as having organized company with \$50,000 capital to build ice plant and manufacture cottonseed-oil products.)

Tex., Carlsbad.—Frick Co., Dallas, Tex. (main office, Waynesboro, Pa.), received contract for refrigerator plant; cost \$7500.

Va., Roanoke.—Virginia Brewing Co. will remodel and erect 2 additional stories to cold-storage plant; completed structure to be 4 stories, 50x60 ft.; provide facilities for storing 50,000 bbls. apples and hundreds of crates of eggs; has refrigerating equipment.

Va., Whitestone.—Little Bay Ice Plant, capital \$15,000, incptd.; W. E. Hathaway, Prest., Whitestone; G. L. Robbins, Secy., Palmer, Va.

IRON AND STEEL PLANTS

Okla., Sand Springs.—Steel Mill.—Osage Iron Co. organized by Barney Smith of Texas Rolling Mill Co. of Fort Worth, Tex., and others; will build plant with capacity to manufacture 29 tons metal into reinforced steel for concrete work, bar iron, track spikes and other merchantable products; electrical equipment.

Tenn., Chattanooga.—Iron Furnace.—Chattanooga Iron & Steel Corp., C. E. Buck, Prest., has blown in iron furnace. (Noted in Nov. as overhauling plant ready to blow in early in Dec.)

Tex., Fort Worth.—Rolling Mill.—Texas Rolling Mill will build 50-ft. reversible furnace for rail reheating and general rolling-mill use.

IRRIGATION SYSTEMS

Tex., Anahuac.—Bulkhead.—Trinity River Irrigation Dist. will let contracts locally for lately-noted repairs to bulkhead damaged by storm in Aug.; \$20,000 available.

Tex., Barstow.—Ward County Irrigation Dist. No. 1, G. W. Dyer, Prest., invites bids until Dec. 20 to construct dams, reservoirs, headgates, sluiceways and other improvements. (See Machinery Wanted—Irrigation.)

Tex., Harlingen.—Cameron county, Irrigation Dist. No. 1, will extend various canals and laterals, aggregating 41,500 cu. yds.; also construct concrete siphon under main canal where Harlingen ditch crosses same, culvert to be 80 ft. long and contain about 30 cu. yds. concrete; Directors of district receive bids until Dec. 20. (See Machinery Wanted—Canal Extension.)

LAND DEVELOPMENTS

Ala., Mobile.—Mobile County Goat & Stock Farm, capital \$10,000, incptd.; C. V. Shoub, Prest.; A. Konstanzer and R. M. Dyer, V.-Ps.; Robt. H. McConnell, Secy.-Treas.

Fla., Blountstown.—Florida Home-Lands Co., Charleston, W. Va., organized; A. A. Riddleberger, Hinton, W. Va., Prest.; B. Krebs, V.-P.; W. B. Stonaker, Secy.; will develop 3500 acres in Calhoun county; divide and sell 10, 20, 40 and 60-acre tracts agricultural lands; Clarke & Krebs, Engrs., Charleston, W. Va. (Lately noted incptd., capital \$50,000.)

Fla., Orlando.—Lake Conway Land Co., lately noted incptd., capital \$50,000, M. O. Overstreet, Prest., takes over lands of M. O. Overstreet and H. J. Conoley; cattle-raising and turpentine manufacturing.

Georgia.—Georgia Farms Co. incptd. by F. R. Hansell of Philadelphia, Geo. H. B. Martin and S. C. Seymour of Camden, N. J.

Ga., Atlanta.—F. M. Robinson purchased about 15 acres with frontage of 1005 ft. on river and 700 ft. on car line; will park river

and car-line frontages; improvements to include concrete swimming pool.

Mo., Perryville.—St. Boniface Church purchased 2.3 acres and will improve as addition to cemetery.

S. C., Foreston.—Foreston Farms Co., capital \$20,000, incptd. by Lawrence Brett, E. L. Wilkins and Charlton DuRant.

Tex., El Paso.—Trans-Pecos Land Co., capital \$15,000, incptd. by J. E. Quaid, Thos. R. Rogers and L. L. McFall.

Va., Newport News.—Le Salle Land Co., capital \$50,000, incptd.; L. P. Stearnes, Pres.; E. M. Jones, Secy.

Va., Norfolk.—Greenwood Place Corp., capital stock \$3000 to \$15,000, will develop about 7½ acres in Norfolk county; build bungalows; W. P. Dodson, Pres.; C. C. Couper, V.-P.; R. S. Jeffries, Secy.-Treas. (Lately noted chartered.)

Va., Petersburg.—Du Pont-Hopewell Development Corp., capital \$50,000, chartered; M. C. Jackson, Pres.; Raymond C. Parsons, Secy.-Treas.

Va., Petersburg.—McKesson Land Corp., T. F. Heath, Pres., acquired and will develop McKesson property as residential section; construct sewer and water systems, pave streets, etc.; develop about 200 acres; capital stock \$25,000; Harvey Seward, V.-P.; E. H. Patterson, Secy.-Treas. (Lately noted incptd.)

Va., Richmond.—Acce Stock Farm incptd.; A. T. Griffith, Pres.; C. W. Saunders, Secy.-Treas.

Va., Roanoke.—Marguerite Orchards, capital \$35,000, incptd.; S. P. Seifert, Pres.; Van Ness Herrmann, V.-P.; R. S. Harris, Secy.; T. R. Wirsing, Treas.

Va., Wytheville.—Columbia Land Co., capital \$50,000, incptd.; E. Lee Trinkle, Pres.; Wytheville; J. C. Ryans, Secy.-Treas. Washington, D. C.

LUMBER MANUFACTURING

Fla., Crystal River.—R. J. Knight and Thos. G. Cranford will build sawmill.

Ga., Augusta.—C. V. McAuliffe, owner of People's Lumber Co., purchased for \$5000 site of old Augusta Ice Co. and will improve as lumber plant.

Miss., Macon.—R. L. Rhymes Lumber Co., capital \$5000, incptd. by R. L. and L. M. Rhymes of Macon and R. L. Van Cleave of St. Louis, Mo.

Va., Church Road.—W. King Davis will rebuild lumber plant lately noted; daily capacity 19,000 ft. rough lumber. (See Machinery Wanted—Sawmill.)

Va., Richmond.—Tilghman Lumber Co., capital \$50,000, incptd.; M. H. Tilghman, Pres.; Richmond; G. M. Tilghman, Secy.; Dunn, N. C.

W. Va., Fayetteville.—Sliger Bros. of Huntington, W. Va., purchased standing timber of 2400-acre tract on New River in Fayette county and will develop.

W. Va., Parkersburg.—Arrow Lumber Co. incptd. by Geo. P. Morgan, J. G. Morris, G. L. Dudley and others.

METAL-WORKING PLANTS

N. C., Wilson.—Roofing and Cornice.—R. E. Hagan will rebuild plant lately noted burned; erect 40x135-ft. 2-story brick building; cost \$7000; old-style tin roof; concrete floor.

Tenn., Maryville.—Aluminum.—Aluminum Co. of America, Pittsburgh, Pa., is reported to improve and enlarge plant; has fourth potroom under construction and contracted for 2 additional.

MINING

Ala., Blocton.—Iron.—Coyle Coal Co., J. B. Coyle, Pres., Birmingham, Ala., is reported to develop 5000 acres iron-ore land in Jefferson county. (See Coal Mines and Coke Ovens.)

Ala., Leeds.—Barytes.—Cahaba Minerals Co., capital \$20,000, organized to develop 100 acres barytes land; has sunk 3 shafts and mined 800 to 1000 tons barytes; E. M. Jones, Pres.; Chattanooga, Tenn.; J. B. Hough, V.-P. and Treas.; J. R. Kyes, Secy.

Ark., Dodd City.—Bear Hill Mining Co., capital \$35,000, incptd. by J. M. Bergman, J. E. Andrew, W. M. Gallagher and others.

Ark., Marble City.—Zinc Concentrating.—H. E. Littleton Mines, H. E. Littleton, Mgr., Harrison, Ark., is erecting 100-ton concen-

trating plant in Newton county; develop 100 acres; contracts let; plant to cost about \$10,000. (See Ark., Marion County.)

Ark., Marion County.—Zinc.—H. E. Littleton Mines, Harrison, Ark., Frank Patrick, Olvey, Ark., Secy.-Treas., and H. E. Littleton, Mgr., will develop lately-noted mines (Fairbright mines) in Marion county; 640 acres zinc carbonate mines; install engine and boiler; C. E. Myles, Constr. Engr., Harrison. Same company erecting 100-ton zinc concentrating plant at Marble City, Newton county; develop 100 acres; 2 drifts now in mountains, 80 ft., with 1500 tons dirt in dump; cost of mill about \$10,000; machinery purchased, and contract has been let for erection of plant under supervision of above-named engineer. (See Machinery Wanted—Engine and Boiler.)

Ark., Yellville.—Arkoma Mining Co., capital \$50,000 incptd. by E. R. Kemp, J. K. Crawford, F. C. Hays and others.

Ark., Zinc.—C. G. Thomas will build custom zinc mill on Little Sugar Orchard Creek.

Fla., Fort Meade.—Phosphate.—Kilne O. Varn will develop soft phosphate deposits. (See Machinery Wanted—Crushing Mills, etc.)

Ga., Macon.—Sand, Gravel, etc.—B. B. Taylor & Co., capital \$5000, incptd. by B. B. Taylor and others.

Ga., Shackleton.—Iron.—Standard Cooperage Co. leased (on royalty basis) 100 acres red iron ore from Michigan Trust Co., receiver for R. G. Peters. (R. G. Peters Mining Co. lately reported as to open additional mine.)

Md., Baltimore.—Sand and Gravel.—Arundel Sand & Gravel Co., Pier 2, Pratt St., foot of Commerce St., approved plan to increase capital from \$2,000,000 to \$3,250,000, acquire property of Frank A. Furst Realty Co. and issue \$750,000 notes, of which \$550,000 are to be issued at once and remaining \$200,000 held for future improvements; property acquired comprises 400 acres on water front in Curtis Bay district suitable for industrial development. (Lately noted.)

Miss., Corinth.—Lead.—A. T. Baden of Chicago, Ill., purchased tract of land and will develop lead mine.

Mo., Cartersville.—J. H. Gayley purchased principal interest in Hoge Mines Co.; 7-acre mining tract; build 200-ton concentrating plant.

Mo., Joplin.—Lead and Zinc.—Coralbut Mining Co., capital \$40,000, incptd. by P. R. Butler, Roy H. Allen and H. A. Walcott.

Mo., Joplin.—Lead and Zinc.—Cinomo Lead & Zinc Co., 219 W. 3d St., organized; will develop 10 acres; Leo. H. Beckman, 1617 First National Bank Bldg., Cincinnati, O., Pres.; R. D. Owen, V.-P.; J. Harry Lindeman, Secy., Treas. and Mgr. (Lately noted incptd., capital \$40,000.)

Mo., Joplin.—Lead and Zinc.—H. R. & C. Mining Co., 3823 Wayne Ave., Kansas City, Mo., organized; A. H. Christ, Pres.; Joseph Hopkins, V.-P.; H. H. Heaps, Secy.-Treas.; R. F. Killon and John Christ, Mgrs.; will develop 20 acres; daily capacity, 200 tons dirt, mill 10 tons lead. (Lately noted incptd., capital \$60,000.)

N. C., Franklin.—Mica.—Western North Carolina Mica Co., capital \$5000, incptd. by A. R. Kasson, J. W. Roper, Henry G. Robertson and others.

Okla., Sand Springs.—Zinc.—United States Zinc Co. acquired additional factory site of 30 acres on which to build additional blocks and buildings; reported to more than double present capacity; now has plant of 7 continuous blocks.

S. C., Greenville.—Sand.—Saluda River Sand Co., capital \$5000, incptd.; C. S. Allen, Pres.-Treas.; M. J. Calhoun, Secy.

Tenn., Harriman.—Limestone.—Harriman Cement & Stone Co. incptd. by John H. Hatfield, G. W. Chandler, M. A. Rash and J. B. Little; acquired 250 acres limestone land and plans development.

Tex., Llano.—Iron.—Wakefield Iron & Coal Land Improvement Co., Ceylon E. Lyman, Pres., 813 Lumber Exchange, Minneapolis, Minn., will develop ore property in Llano iron district; not yet ready to state details; is developing manganese ore deposits in Mason county and will soon begin shipments.

Va., Ridgeway.—Feldspar.—J. Shirley Smith and others will develop feldspar deposits; plan to build mill to grind output.

Va., Richmond.—Lead and Zinc.—Virginia Lead & Zinc Corp., capital \$800,000, chartered; Andrew Christian, Pres.; Dean Maury, Treas.; H. H. Chalkley, Secy.

MISCELLANEOUS CONSTRUCTION

Fla., Davista, P. O. at St. Petersburg.—Yacht Basin.—St. Petersburg Investment Co., St. Petersburg, will dredge yacht basin near Davista; 200x250 ft.; depth 6½ ft.

Fla., Jacksonville.—Bulkhead.—City let contract E. W. Parker at \$1750 to construct 2000 ft. of bulkheading; hard cypress timber.

Fla., Jacksonville.—Breakwater.—Government will repair breakwater, Fort Taylor, Key West.; U. S. Engr. office, Jacksonville, Fla., receives bids until Dec. 31. (See Machinery Wanted—Breakwater Construction.)

Fla., Pensacola.—Filling.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C., asks bids on 800 cu. yds. filling on site for hangers. (See Machinery Wanted—Filling.)

Fla., Sanford.—Basin.—Sherman & Kennison, S. Sherman, Mgr., Box 462, will dredge basin (lately mentioned under Miscellaneous Factories) for boat harbor; about 15,000 yds. removal. (See Machinery Wanted—Dredging Machinery.)

Ga., Atlanta.—Swimming Pool.—F. M. Robinson will build concrete swimming pool. (See Land Developments.)

La., New Orleans.—Wharf and Causeway.—Port Com. will receive bids until Jan. 5 to construct Dumaine St. crescent wharf and reinforced concrete causeway with creosoted wood block roadway; J. Devereaux O'Reilly, Engr. (See Machinery Wanted—Wharf and Causeway.)

Md., Baltimore.—Export Pier.—Baltimore & Ohio R. R., F. L. Stuart, Ch. Engr., Baltimore, plans construction export pier costing \$700,000, for South American trade, provided proposed steamship service is arranged for.

Md., Baltimore.—Retaining Wall.—City will construct masonry retaining wall on Ellicott Driveway south of Edmondson Ave.; about 200 cu. yds.; coursed rubble masonry; contract No. 144-A; Board of Awards receives bids Dec. 8; John R. Robinette, Pres. Comms. for Opening Streets. (See Machinery Wanted—Retaining Wall.)

Md., Baltimore.—Coal Pier.—Baltimore & Ohio R. R. Co., F. L. Stuart, Ch. Engr., Baltimore, has contractors (recently detailed) preparing to construct coal pier for annual capacity 10,000,000 tons coal; total expenditure about \$1,500,000; H. S. Kerbaugh, Inc., Munsey Bldg., Baltimore, and New York, general contractor, has awarded sub-contract for foundation and piling to Phoenix Construction Co., 41 Park Row, New York. (Other details lately mentioned.)

Miss., Waveland.—Seawall.—Seawall Commissioners of Dist. No. 1, Hancock county, Chas. G. Moreau, Pres., Bay St. Louis, Miss., let contract Massey & Co., representing A. E. Massey of New Orleans, La., and Chas. G. Ollinger of Mobile, Ala., to build reinforced concrete seawall along Waveland front and filling; length 7500 to 8000 ft. (Call for bids lately noted.)

Mo., New Madrid.—Levee.—St. John Levee and Drainage Dist. of Missouri, W. S. Edwards, Secy., South Room, Hunter Bank Bldg., let contract Hillsboro Dredging Co., Tampa, Fla., to construct 300,000 cu. yds. special hydraulic fill levee, crown 10 ft.; Miller Engineering Co., Engr., Little Rock, Ark. (Call for bids noted in October.)

Mo., St. Louis.—Dock.—City will construct dock; 1200 ft.; Board of Public Service, E. R. Kinsey, Pres., approved plans first section, 300 ft.; reinforced concrete, including piling and decks; open underneath and ripped; diagonal pile fenders extending back from each end of dock; levee paving; railroad track on center; steel frame warehouse in back of track; crane to operate between track and water side; 2 traveling cranes to transfer material between either boats and cars or between boats and warehouse; warehouse and platform with electric trucks and possibly with tiering machines; estimated cost of dock \$255,000 and of equipment \$30,000; Board of Aldermen considering ordinance to provide construction; estimated cost of other 3 dock sections, to be considered after completion of first section, is \$155,000.

Tenn., Memphis.—Fill.—City invites bids until Dec. 7 for 10,000 cu. yds. of clay fill across Bayou Gayoso south of North Memphis pumping station; Geo. C. Love, Mayor; C. C. Pashby, City Clerk. (See Machinery Wanted—Fill.)

Tenn., Memphis.—Subway.—City Comms., Nashville, Chattanooga & St. Louis Ry. (J. Howe Peyton, Pres., Nashville, Tenn.), Union Ry. (W. S. Martin, Pres., Memphis) and Memphis Street Ry. Co. (T. H. Tutwiler, Pres., Memphis) are considering arrangements to construct subway at Lamar Ave.;

estimated cost \$108,000, including \$3000 for paving.

Tex., Athens.—Floodgates.—Koon Creek Club let contract Austin Bros., Dallas, Tex., to construct floodgates impounding 1000 acres water; Henry E. Elrod, Engr., Southwestern Life Bldg., Dallas.

Tex., Arthur City.—Revetment.—St. Louis & San Francisco R. R. let contract J. W. Murray Contracting Co., Kansas City, Mo., for 4000 ft. revetment work on Red River above Arthur City.

Tex., Orange.—Dredging.—John Jacobson of Galveston is lowest bidder at about \$46,500 to dredge city slip; 3000 ft. long, 200 ft. wide, 25 ft. deep; excavation, 750,000 cu. yds.; E. U. Henry, City Engr. (Call for bids lately noted.)

Va., Norfolk.—Dredging.—Navy Dept., Bureau of Yards and Docks, Washington, D. C., let contract Coastwise Dredging Co. of Norfolk for 700,000 to 800,000 cu. yds. dredging, slabs and edgings, clay gravel, etc., at Norfolk Navy-yard; estimated cost \$100,000. (Lately noted.)

W. Va., Charleston.—Tunnel Fans.—Baltimore & Ohio R. R., F. L. Stuart, Ch. Engr., Baltimore, Md., is reported to install fans in longer tunnels between Parkersburg and Grafton, W. Va.

MISCELLANEOUS ENTERPRISES

Ala., Cordova.—Coal Barge Line.—Cane Creek Tiptoe Co., capital \$25,000, incptd. by Henry T. De Bardeleben (Pres.), G. M. Bowes and De Bardeleben Coal Co., all of Birmingham; will barge coal on Warrior River; utilize wharf and tippie built on Cane Creek, near Cordova, by De Bardeleben Coal Co.; coal transported by Frisco Ry. from Sipsey to Cane Creek plant and there loaded for Mobile and New Orleans.

Ala., Mobile.—Grain Elevator.—Joseph F. Durham, 404 Church St., lately noted securing option on grain elevator from Mobile & Ohio R. R., and to organize operating company, proposes to repair structure, 151x60 ft. on ground and 131 ft. from ground to peak of roof; also to install new electrical machinery; total cost about \$40,000; capacity 250,000 bushels; plans include overhauling 3 elevators; 3 1000-bus. Fairbanks hopper scales; new car mover for 16 cars; 3 new power shovels, 1 opposite each elevator; overhauling conveyor 650 ft. long (has 32-in. conveyor belt, Monitor separators and collectors, air trunking, etc.); Hess dryer to be overhauled and improved; 48-in. tubular boiler, 32-in. 12-ft.-long tubes; 3 12-in. telescope trolley spouts; 7 marine loading steel spouts, 12-in. with pulleys and tackle, etc.; spouting on track floor of elevator; belt trippers; passenger elevator; 5 40-H.P., 1 70-H.P., 4 10-H.P. and 1 70-H.P. A. C. motors.

Ala., Montgomery.—Advertising.—Stedem-Byrne Advertising Co., capital \$5000, incptd.; A. F. Stedem, Pres.; M. M. Stedem, V.-P.; H. M. Byrne, Secy.-Treas.

Ala., Birmingham.—Dry Cleaning.—E. & W. Dry Cleaning Co. increased capital stock from \$10,000 to \$15,000.

Ark., Searcy.—Laundry.—Searcy Steam Laundry, Lee Ragsdale, Propr., will rebuild burned plant.

Fla., Green Cove Springs.—Cattle.—Southern Cattle Feeding Co., S. E. Strode, Pres., Dayton, O., purchased 24,000 acres in Clay county; clear and fence tract; stock farm with about 8000 head cattle and later add large number hogs; also plant various crops, including velvet beans, corn, sugar-cane and Natal hay; main office at Green Cove Springs.

Fla., Jacksonville.—Greenhouse, etc.—Glen St. Mary's Nursery Co. will build greenhouse, garage and residence; brick; cost \$7000.

Fla., Key West.—Molasses Tanks.—Florida East Coast Ry., E. Ben Carter, Chief Engr., St. Augustine, let contract Graver Tank Works, East Chicago, Ind., to construct 2 molasses tanks; each 75 ft. diam. and 30 ft. high, steel construction; capacity 1,000,000 gals. each; install pumps, piping, etc.; total cost \$29,000; understood Florida East Coast Co. will ballast its Key West to Havana ferry steamer with molasses (instead of water) after completion of tanks, this by Dec. 30. (Lately reported to construct tanks, etc.)

Ga., Barnett.—Cattle Raising, etc.—South-eastern Cattle Co. (lately noted incptd., capital \$25,000) organized with L. P. Sawtell, Atlanta, Pres.; R. A. Cason, 428 Courtland St., Atlanta, Secy.-Treas.; has 2000 acres land; will raise cattle, hogs, goats, fowls and vegetables, also some hay; products, green and cured meats and fertilizers; in-

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all ice plant; will erect 3 50x50-ft. barns of wood frame, with galvanized-iron covers and sides; slaughter-house, ice plant, etc., of concrete; construction by day labor; concrete structures not to be built before summer.

Ga., LaFayette—Printing Plant.—Walker County Messenger, E. P. Hall, Jr., Prest., will build; ordinary construction; 24x50 ft.; cost \$200; J. T. Hale, LaFayette, probable contractor; will install engines, presses, linotype, folder, etc.; cost about \$700; newspaper and job printing. (Lately noted to erect building.)

Ky., Grayson—Printing.—J. W. Lusby will rebuild printing office reported burned; erect 20x50 ft. \$1300 tile and concrete building with asbestos roof and concrete floor; electric lighting; plans by J. N. King, Ashland, Ky. (See Machinery Wanted—Printing Machinery.)

Ky., Louisville—Dental Supplies.—Louisville Dental Supply Co., capital \$10,000, incorporated by Arthur E. Muller, Geo. T. Branham and Henry Fortlinger.

La., New Orleans—Grain Elevator.—Commissioners Port of New Orleans, Ernest M. Leeb, Prest., has plans and specifications for grain elevator with capacity about 1,000,000 bus. grain; reinforced concrete construction; plant to include marine tower and about 1500 ft. conveyor galleries; location, east bank Mississippi River; receive construction bids until Dec. 29; \$25,000 (cash or certified check) with each proposal; plans and specifications on file at office Ford, Bacon & Davis, Engrs., 321 Canal St., New Orleans; full sets furnished to prospective bidders on deposit \$100, returnable to bidders submitting proposals; \$80 returnable to bidders not submitting proposals; \$300,000 bond required from contractor; Commrs. lately mentioned awarding contract to Doullut & Williams, New Orleans, at \$188,000 to construct 150x12-ft. grain elevator wharf; Marks Electrical Construction Co., New Orleans, lowest bidder at \$21,690 for underground conduit, wiring, etc., of warehouse. (See Machinery Wanted—Elevator (Grain) Construction.)

Md., Annapolis—Transportation.—West Shore Transit Co. plans to issue \$40,000 stock and operate motor omnibuses on Western and Eastern Shores of Maryland between Annapolis, Washington, West River, Solomon's Island, Owensville, Fairmont, Paconoke, Crisfield and Salisbury; also proposes to operate motor-boat line across Chesapeake Bay between Crisfield and Solomon's; W. P. Lawson, P. H. Lawson and P. H. Briscoe are interested.

Md., Baltimore—Steamboat Line.—Stoney Creek Steamboat Co., capital \$12,000, organized with Geo. Dinning, Prest., 600 S. Broadway, to operate steamboat from Baltimore to points along Stoney Creek.

Mo., Kansas City—Hardware.—Bunting Hardware Co., capital \$100,000, incptd. by Geo. H. Bunting, F. D. Whiting and M. H. Winger.

Mo., Kansas City—Dairy.—Golden Valley Dairy Co., capital \$500, incptd. by E. E. Knoche, Oliver Y. Carrow and J. M. Klopmeier.

N. C., Raleigh—Printing Plant.—News and Observer, Josephus Daniels, Prest., will soon have plans completed for erection of building to replace plant noted burned in November, loss about \$100,000; now located in temporary quarters.

N. C., Weldon—Hardware.—Wiley-Moore Hardware Co., capital \$50,000, incptd. by J. J. Wiley, J. J. Moore and C. R. Emry.

Okla., McAlester—Hardware.—McClenahan-Tanner Hardware Co., capital \$500, incptd. by S. H. Tanner of McAlester, Jas. McClenahan and H. W. Banks of Quinton, Okla.

S. C., Greenville—Publishing.—Piedmont Publishing Co., 365 Masonic Temple Bldg., will hold meeting Dec. 30 to consider increase in capital from \$10,000 to \$15,000.

S. C., Spartanburg—Hardware.—Palmetto Hardware & Supply Co., capital \$12,000, incorporated; Jas. J. Boyd, Prest.; W. W. Simmons, V. P.; Herbert T. Taylor, Secy.-Treas.

Tenn., Bristol—Abattoir.—G. L. Aronhime will build abattoir and packing plant; purchased site containing several acres; let contracts for machinery.

Tex., Brownsville—Cattle.—C. P. Barreda Land & Cattle Co., capital \$10,000, incptd. by C. P. Barreda, A. Wayne Wood and Jas. A. Brown.

Tex., Groesbeck—Hardware, etc.—Oliver-Nussbaum-Scharff Co., capital \$10,000, incorporated by D. Oliver, S. Nussbaum and L. Scharff.

Va., Newport News—Grain Elevator, etc.—Chesapeake & Ohio R. R. Co., F. I. Cabell, Ch. Engr., Richmond, is reported to improve grain elevator R and piers.

Va., Norton—Norton Electric Supply & Equipment Co., capital \$15,000, incptd.; W. H. Keller, Prest.; M. B. Keller, Secy.

W. Va., Davis—Tires.—Perfection Tire Sales Co., capital \$250, incptd. by W. M. E. H. and J. C. Faw, C. J. Simpson and others.

W. Va., Martinsburg—Skating Rink.—Martinsburg Rink Co., capital \$500, incptd. by W. E. Crawford, M. J. Miller, Allen B. Noli and others.

MISCELLANEOUS FACTORIES

Ala., Anniston—Explosives.—New York capitalists will, it is rumored, build \$1,500,000 plant to manufacture gun cotton and other high explosives; Jas. Mitchell, Prest., Alabama Power Co., Birmingham, and 120 Broadway, New York, and associates are reported interested.

Ala., Bay Minette—Paper Wall Board and Box Board.—Frank B. Nihart and others contemplate establishment of mechanical pulp paper mill; capacity 10 tons daily; manufacture wall board and box board. (See Machinery Wanted—Paper and Pulp Machinery.)

Ala., Birmingham—Vinegar, etc.—Southern Pickle & Vinegar Co., capital \$10,000, incptd.; W. A. Weaver, Prest.; Albert Spencer, V. P. and Treas.; M. S. Seal, Secy.

Ala., Brewton—Turpentine.—Gordon Naval Stores Co. will build turpentine plant; cupping system; leased timber land.

Ala., Montgomery—Tea and Syrup.—Liquid Tea & Syrup Co., capital \$15,000, incptd.; W. H. Duran, Prest.; S. D. Sages, V. P.; Thos. A. Himes, Secy.-Treas.

Fla., Fort Pierce—Bottling.—Coca-Cola Bottling Co., J. W. Guldge, Mgr., will erect building for bottling plant; reinforced concrete; 1 story; 25x50 ft.; walls to permit erection of second story.

Fla., Orlando—Turpentine.—Lake Conway Land Co. Incptd., capital \$50,000, will manufacture turpentine. (See Land Developments.)

Fla., Ruskin—Brooms.—A. Q. Russell will establish broom factory; ordered machinery.

Ky., Louisville—Wm. Colgan Co., capital \$10,000, incptd. by Wm. Colgan, J. Coleman Duncan and Edwin A. Stotsenberg.

Ky., Whitesburg—Tanning Acid.—Armour & Co., Chicago, are reported as planning establishment several tanning-acid factories, consuming scrub timber from Kentucky mountain forests; considering locations on Lexington & Eastern branch of Louisville & Nashville Ry., one being near Whitesburg; Armour & Co. wire Manufacturers Record: "No definite plans regarding tanning-acid factory; investigating field; expect locate soon as find suitable property."

Md., Baltimore—Ice-cream, etc.—Maryland Ice-Cream & Fruit Products Co., 17 E. Pratt St., postponed erection of addition to plant. (Plans lately reported to be prepared by C. D. Cooley Co., Pittsburgh.)

Md., Baltimore—Iron and Steel Products.—Chas. M. Christian, 401 E. 25th St., plans installation iron-working machinery; to occupy 250,000 sq. ft. floor space; to manufacture iron and steel products. (Lately reported seeking manufacturing space, etc.)

Miss., Vaiden—Brooms.—Abner Armstrong will establish broom manufacture, in connection with scroll and cane seat chair-making. (See Woodworking Plants. See Machinery Wanted—Broom Machinery.)

Mo., Kansas City—Bakery.—Co-operative Bakery Co., capital \$200, incptd. by H. Levine, D. Deckers, Jr., and J. Lessner.

Mo., Kansas City—Paint.—Kansas City Paint Co., capital \$500, incptd. by Elmer E. Surface, Giles McDaniel and H. A. Sayers.

Mo., St. Louis—Moving Pictures.—F. H. Craenbroeck, Syndicate Trust Bldg., plans organization company to manufacture moving-picture films.

Mo., St. Louis—Horse Collars.—J. B. Sickles Saddlery Co. purchased 4-story-and-basement building, containing 40,000 sq. ft. floor space, and will equip to manufacture horse collars.

Mo., St. Louis—Ice Cream.—Larimore Ice Cream Co. will build factory; 50x218 ft.; estimated cost \$15,000; J. D. Donovan of Korte-Rust Co. is preparing plans.

Mo., St. Louis—Moving Pictures.—John C. Jannopoulos, Propr. Delmar Garden, and W. J. Kennedy plan organization company to manufacture moving-picture films; build complete plant similar to Universal City in California.

N. C., Charlotte—Bottle Openers.—Perfect Bottle Opener Co., 536 W. 5th St., incptd. by J. Luther Snyder and R. Brice Cochrane of Charlotte and G. H. Marvin of Gastonia, N. C.

N. C., Forest City—Creamery.—Farmers' Co-operative Creamery, B. H. Bridges, Secy.-Treas., purchased 2-acre site on which to build creamery; 28x51 ft.; concrete floors; install boiler to furnish power and heat; later will probably install ice plant; cost about \$4000. (Noted incptd. in Oct. with \$50,000 capital.)

N. C., Greensboro—Cigars.—El Rees-Sa Cigar Co., John T. Rees, Prest., approved plans for cigar factory building; 125x32 ft.; 3 stories.

N. C., Raleigh—Tires.—Capital Tire & Supply Co., capital \$25,000, incptd. by Geo. M. Webb, R. D. Godwin and Willis Smith.

Okla., Sand Springs—Sulphuric Acid, etc.—Industrial Chemical & Mfg. Co. (S. H. Locke and associates) will build plant to manufacture silica and caustic soda, sulphuric acid and potash; erect sheet-steel structure 25x100 ft.

Okla., Tulsa—Coffee Roasting.—Hooper Bros. will install coffee roasting plant at 403 E. 1st St.; capacity 1 ton of roasted coffee every 2 hours; purchased machinery.

Tenn., Clarksville—Ice Cream.—Garrison's Ice Cream Co. (V. O. Garrison, present address Fayetteville, Tenn.) will establish lately-noted ice-cream plant; daily capacity 100 to 300 gals.; building and machinery plans not fully decided. (See Machinery Wanted—Refrigerating Machinery; Ice Cream Machinery.)

Tenn., Kingsport—Chemicals, Dyes, etc.—Federal Dyestuff & Chemical Co., 30 Pine St., New York, is about to close contract for installation plant with daily capacity 20 tons chlorine and 20 tons caustic soda; proceeding with construction building (first unit 75x70 ft.) in which to install machinery for manufacture of sulphur black and aniline colors. (Other facts lately noted.)

Tenn., Kingsport—Chemicals, Dyes, etc.—Federal Dyestuff & Chemical Co., capital stock \$15,000,000, incptd. and organized; Chrmn. Directors, A. B. du Pont of E. I. du Pont de Nemours & Co., Wilmington, Del.; V. P's., John C. Hebben (new company's Chem. Engr. and formerly with Cassella Color Co., German dyestuff distributor) and Walter A. Gulle, Jr.; Treas., Allison M. Archer of White & Co.; each of New York; offices at 30 Pine St., New York; has 20-acre site; begun construction buildings (first unit 75x70 ft.) in which to install machinery to manufacture sulphur black for dyeing cotton cloth, sulphuric acid, picric acid, benzol, etc.; proposes capacity 18,000 tons picric acid during 1916; report states has order for 500,000 lbs. sulphur black, and that foreign government is negotiating for 1916 output picric acid. (Lately noted to build dye manufacturing plant, etc., financed by New York capitalists, etc.)

Tex., Galveston—Shipbuilding.—Galveston Drydock & Construction Co., Chas. N. Crowell, Mgr., 318 City National Bank Bldg., will build modern shipyard to handle repairs on vessels trading through Galveston and to build wood or steel vessels up to 300 ft. long; let contract to Crandall Engineering Co., Boston, Mass., to install 1000-ton marine railway; also will equip with floating drydock of steel and wood construction, ultimate lifting capacity 10,000 tons, designed and built by Mr. Crowell; plant will contain machine and boiler shops and wood-working equipment.

Va., Christiansburg—Fans.—Wilmont Fan Co., capital \$50,000, incptd.; J. K. Montague, Sr., Prest.; Mosby Montague, Secy.-Treas.

Va., Norfolk—Paint and Varnish.—Vanocna Realty Corp., J. Iredell Jenkins, Prest., will erect brick building and equip as paint and varnish factory; total investment \$15,000.

Va., Norfolk—Abern-Dawkins Co., capital \$50,000, incptd.; M. V. Abern, Prest., Norfolk; E. Dawkins, Secy., Cleveland, O.

Va., Petersburg—Butter.—Petersburg Butter Co., capital \$50,000, incptd.; J. Powell Watson, Prest.; Benj. W. Jones, Secy.

Va., Roanoke—Coffee and Spice.—Roanoke Coffee & Spice Co. increased capital stock from \$100 to \$100,000.

Va., South Washington.—James A. Burns, Inc., capital \$25,000, chartered; Jas. Burns, Prest.; Besse Leatherman, Secy.; both of Washington, D. C.

W. Va., Moundsville—Whips.—H. Brown Whip Co. will make improvements to plant; to include additional engine-room and 32½ H. P. engine.

MOTORS AND GARAGES

Fla., Florida City—Automobile Transportation.—Rapid Transit Co. of Dade County, capital \$10,000, incptd.; W. F. Skinner, Prest.; Walter Brown, V. P.; B. Skinner, Secy.-Treas.

Fla., Jacksonville—Garage, etc.—Glen St. Marys Nursery Co. will build garage, greenhouse and residence; brick; cost \$7000.

Fla., Miami—Garage.—F. H. Rand, Jr., will build garage; utilize old Realty Bldg. adjoining and build front across entire building; 50x100 ft.

Fla., Tarpon Springs.—G. E. Nobilt contemplates erecting hotel or garage at E. Tarpon Ave. and King St.

Ky., Paducah—Garage.—City Realty & Investment Co. will erect garage and store building; 90x165 ft.; 15,000 sq. ft. floor space; 2 storerooms, each 30x70 ft., on either side of garage; frontage of plate glass; at present to be 1 story, but later plans to build 2 or 3 additional stories.

Md., Annapolis—Automobile Line.—West Shore Transit Co. will issue \$10,000 stock and operate automobiles over 3 routes in Southern Maryland, including one between Annapolis and Solomon's Island, on Patuxent River.

Md., Towson—Automobile Line.—Towson & Cedarcroft Bus Co. organized with \$25,000 capital to operate automobile line from Court-house, Towson, to German and Light Sts., Baltimore.

Mo., St. Louis—Automobiles, etc.—Bartholomew Mfg. & Supply Co., capital \$15,000, incorporated by E. C. and E. L. Bartholomew and Edward Newman.

Mo., St. Louis—Motor Cars.—Steele-Morgan Motor Car Co., capital \$300, incptd. by John L. Steele, C. K. Rowland and C. F. Westcott.

Mo., St. Louis—Automobiles.—Taylor Auto Service Co., capital \$200, incptd. by Earl B. L. and Thos. E. Taylor.

Okla., Cushing—Garage and Machine Shop. Jeff's Machine Shop & Auto Garage Co., capital \$6000, incptd. by L. D. Berry, C. K. Laughlin, H. C. Vineyard and G. W. Barton.

Okla., Oklahoma City—Automobiles, etc.—Universal Auto & Supply Co., capital \$5000, incptd. by W. L. Mower, L. S. Vaughan and W. H. Boon.

Okla., Tulsa—Garage.—Mitchell & Crosbie, 203 Reeder Annex, have plans by and let contract to Rooney & Brennan to erect 50x100-ft. \$600 fireproof garage and showroom; Dodge automobiles.

Tex., El Paso—Automobile Supplies.—Western Motor Supply Co. increased capital from \$6000 to \$12,000.

Tex., Houston—Garage.—J. W. Saunders will erect addition to garage; cost \$2800.

Tex., Houston—Automobiles.—Austin Motor Car Co., capital \$500, incptd. by A. Lipper, Geo. Lipper, Edward Lipper and A. E. Austin.

Tex., Wortham—Garage.—Wortham Auto Garage Co. will erect garage and store building; 75x80 ft.; brick and concrete; install machinery for repair work; R. L. Hastings is Contr.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Tenn., Nonconnaah.—Illinois Central R. R., A. S. Baldwin, Chief Engr., Chicago, let contract E. H. Walsh & Son, Memphis, Tenn., for foundations, sewers, etc.; Nohsey & Schwab, Memphis, for sheet metal work, painting, etc., and Kelly-Atkinson Construction Co., Chicago, Ill., for structural steel work; building to be of steel frame construction, with cement tile roof and concrete foundations; 176 ft. wide, 1200 ft. long; estimated cost \$150,000. (Other Nonconnaah improvements heretofore reported.)

Tex., Marshall—Texas & Pacific Ry., C. H. Chamberlin, Ch. Engr., Dallas, has plans for shop buildings; plans call for immediate construction coach shop, cabinet and upholstering shop 180x255 ft., paint shop 108x195 ft. and paint-storage room 30x60 ft. (Further facts lately noted.)

ROAD AND STREET WORK

Ala., Birmingham.—Board Commrs. let contract to Geo. Fromhold, Birmingham, to construct 6300 yds. cement sidewalk on 1st Ave. between Viaduct and 41st St. at \$337.50; 62½ cents per sq. yd.; let contract to H. N. Bowdry, Birmingham, for grading, combined curb and gutter and sidewalk paving on Ave. T. Ensey, estimated cost \$1651.50; Julian Kendrick, City Engr. (Lately noted.)

Ala., Dothan.—Houston county will construct road from Dothan toward Midland City, distance of 7 mi., to dividing line between Houston and Dale counties; Board of Revenue, A. C. Crawford, Chmn., receives bids until Dec. 30. (See Machinery Wanted—Road Construction.)

Ala., Eutaw.—Greene County Comms. contemplate expending \$10,000 to \$15,000 to pave highway from Eutaw to Finch's Ferry on Warrior River.

Ala., Rockford.—Coosa county will grade and topsoil Rockford and Kellyton Rd. from near Hislop towards Kellyton for 4½ mi.; County Comms. receive bids until Jan. 11; J. A. Crawford, Judge of Probate. (See Machinery Wanted—Road Construction.)

Ark., Little Rock.—City will repave Prospect Ave. from east limits of Pulaski Heights to Forest Park, Little Rock, and extend double track of Little Rock St. Ry.; officials of the 2 cities, Pulaski County Judge and railway company are interested; estimated cost \$65,000; H. Levinson, City Engr. of Little Rock; L. H. Bradley, Mayor of Pulaski Heights.

Ark., Little Rock.—City Council appropriated \$1400 to Comms. Paving Dist. No. 229 (E. L. Keene, C. L. Boone and C. Guidice) toward paving 2 blocks on Denison and Barton Sts. between Markham and 2d Sts.; plans being prepared; will probably soon invite bids; H. Levinson, City Engr., to be in charge.

Ark., Little Rock.—City will organize Paving Dist. No. 249 to resurface with asphalt, crossroads blocks or other paving Center St. from Markham to 7th St.; A. C. Read and others are interested.

Ark., Little Rock.—City plans to organize paving district, to include Johnson St. from Capitol Ave. to 12th St. with macadam; Verne McMillan is Dist. Atty.

Ark., Little Rock.—City will organize Lee Ave. Paving Dist., to comprise about 50 blocks in western section of city; Jas. Fletcher and T. D. Crawford will probably be appointed Comms.; Pulaski Heights, L. H. Bradley, Mayor, will also organize paving district, to embrace about same number of blocks; C. N. Faubel, H. D. McCowan and G. M. Wallace will be named Comms.

Ark., Osceola.—Mississippi county, Osceola and Little River Road Improvement Dist. No. 1 (R. C. Rose, A. S. Rogers and H. P. Dunnivant, Comms.) let contract Arkansas Construction Co. of Little Rock, Ark., at \$184,495 to construct 29.5 mi. concrete highway; district to furnish cement, stone, sand and gravel; also let contract Midland Bridge Co. of Kansas City, Mo., at \$7869 to construct 8 bridges and Vincennes Bridge Co., Vincennes, Ind., at \$5550 to construct drawbridge across Little River; issued \$305,000 bonds; Pride & Fairley, Engrs., Osceola. (Call for bids lately noted.)

Ark., Pine Bluff.—Comms. Paving Dist. No. 13 (H. I. Holderness, Chris Handley and V. B. Alexander) will pave Cherry St. from 24th Ave. to new Country Club, about 10 blocks.

Ark., Pulaski Heights (P. O. at Little Rock).—City will organize paving district, to contain about 50 blocks; C. N. Faubel, H. D. McCowan and G. M. Wallace will be named Comms.; L. H. Bradley, Mayor. (See Ark., Little Rock.)

Ark., Pulaski Heights (P. O. at Little Rock).—City is organizing district to grade and pave Lee Ave. from Fairfax Ave. to Laurel St., and all intersecting streets south of Prospect Ave. to Lee St.; estimated cost \$30,000; L. H. Bradley, Mayor.

Ark., Stuttgart.—City will expend \$30,000 on street paving; improvement districts; contracts not let; Fred W. Towl, Engr.; O. M. Young, Dist. Atty. (Lately noted.)

Fla., Fellsmere.—City let contract Even & Hawk of Fellsmere to construct 26,000 sq. ft. concrete sidewalks; if ordinances for paving Magnolia and Maple Sts. pass, amount of paving will be increased to 50,000 sq. ft.; Wallace Sherwood, Secy. Comms. (Call for bids lately noted.)

Fla., Fort Pierce.—St. Lucie County Commissioners let contract to J. G. Coats & Co., Fort Pierce, for paving roads; \$60,000 available; Miller Hallows, Engr., Walton, Fla. (Noted in October.)

Fla., Fort Pierce.—St. Lucie County Commissioners let contract to Good Roads Construction Co., Heard National Bank Bldg., Jacksonville, Fla. (not of Memphis, Tenn., as lately stated), to construct 4½ mi. asphalt surfacing.

Fla., Gainesville.—City, Christopher Matheson, Mayor, voted \$21,000 bonds to pave western portion of University Ave. with vitrified brick and to extend sewer system.

Fla., Kissimmee.—City will soon invite bids to pave Main St. from end of brick paving to city limits; estimated cost \$12,000. (Noted in Aug.)

Fla., Miami.—J. W. Wright, Jr., let contract H. L. Clark & Son to pave streets in Overbrook Park.

Fla., Okeechobee.—City let contract to lay ½ mi. cement sidewalks. Address The Mayor.

Fla., Tampa.—City will construct 112,650 sq. yds. asphalt block pavement and 3500 sq. yds. concrete pavement; concrete and granite curbing; Comms. of Public Works, D. B. McKay, Chmn., receive bids until Dec. 20; lately noted. (See Machinery Wanted—Paving.)

La., De Ridder.—Beauregard parish is reported as contemplating voting on \$700,000 bonds for road construction. Address Police Jury.

Md., Baltimore.—Paving Com., R. Keith Compton, Chmn., has new appropriation of \$1,000,000 for expenditure during 1916, amount named in ordinance of estimates for next year; has selected 17 streets; smooth paving; soon prepare plans and specifications; invite bids so that contracts may be awarded for construction to begin when winter ends. (Details will be reported as announced.)

Md., Salisbury.—Wicomico county will construct 1.35 mi. State-aid highway upon or along Brewington's Branch-Zion Rd. between Middle Neck Rd. and Five Points; County Comms. receive bids until Dec. 14; H. M. Clark, Roads Engr. (See Machinery Wanted—Road Construction.)

Miss., Starkville.—City invites bids until Dec. 15 for following: Removal of about 525 yds. of earth, placing of 4282 tons of Novaclite in 2 courses, placing of 5315 lin. ft. curb and gutter, placing 1900 lin. ft. storm sewer, 16 catch-basins and applying of asphaltic binder to 15,500 sq. yds. surface; P. G. Sudduth, Mayor, and Board of Aldermen receive bids until Dec. 15; E. C. Thomas, Engr., Nash Building, Starkville. (See Machinery Wanted—Street Improvements.)

Mo., Bolivar.—Polk county, Bolivar Special Road Dist., G. M. Upton, Secy. County Highway Com., will open bids in about 60 days to construct lately-noted 10 mi. roads and culverts; \$25,000 available.

Mo., Kansas City.—Park Board let contract W. C. Mullins at \$25,000 to grade Meyer Blvd. from Paseo to Wornall Rd.

Mo., Kansas City.—J. C. Nichols Realty Co. let contract Smith Bros. to grade 58th St., 58th St. Terrace, 58th St. Terrace and Huntington Road from Summit St. to Ward Parkway and Bellevue Ave. from 58th St. to Huntington Road; about 35,000 cu. yds. excavation.

Mo., Springfield.—Greene County, Ingram Special Road Dist., let contract Otto Chapman, Stafford, Mo., at \$22,000 to construct 9½ mi. road. (Noted in November.)

Mo., Stotts City.—City voted \$13,500 bonds to construct 9 mi. rock road. Address The Mayor.

N. C., Charlotte.—City let contract A. G. Guion & Co. of Charlotte at \$20,050 to construct 17,500 sq. yds. concrete sidewalks; A. H. Wearn, City Clerk and Treas. (Call for bids lately noted.)

Okla., Claremore.—Rogers county townships voted bonds for road improvements as follows: Catoosa, \$18,000; Chelsea, \$50,000; Claremore, \$30,000; Foyil, \$25,000; Inola, \$30,000; Oologah, \$30,000; Talala, \$20,000; Wister, \$45,000.

Okla., Ringling.—City, Frank L. Ketch, Pres. Board of Trustees, contemplates lately-noted street grading, but probably not for one year.

Okla., Sand Springs.—City, A. J. Shultz, Clerk, contemplates paving.

S. C., Anderson.—W. W. Johnson has contract to pave between tracks of North Anderson Ry. from Greenville to Roberts Sts.

S. C., Florence.—City, J. Newton Johnston, Commr. of Streets, will construct about 4275 sq. yds. street roadway and 2½ mi. 5-ft. concrete sidewalk; receive bids Jan. 11 on plain and reinforced concrete construction and on vitrified brick with concrete base and with sand and gravel base; C. H. Carlisle, City Engr. (See Machinery Wanted—Paving; Concrete Mixers, etc.)

Tenn., Athens.—McMinn county is reported as contemplating voting on \$100,000 road bonds. Address County Comms.

Tex., Denton.—College of Industrial Arts let contract J. M. Gurley to construct 2250 ft. concrete curb and gutter along main driveway on College campus.

Tenn., Dover.—Stewart county votes in

Dec. on \$300,000 bonds to construct roads. Address County Comms.

Tex., Dallas.—Dallas County Comms. invite bids to construct 2900 ft. asphalt macadam roadway on Preston Rd. from city limits to Armstrong Ave.

Tex., Fredericksburg.—Gillespie county votes Dec. 7 on \$300,000 bonds to construct and improve roads. Address County Comms.

Tex., Galveston.—City votes Jan. 18 on \$875,000 bonds as follows: \$250,000 to pave, drain and improve streets; \$200,000 to repair, restore or submerge water mains across Galveston Bay; \$300,000 to restore, repair, fill, grade, pave, drain and improve streets, sidewalks, etc., damaged in Aug. storm; \$125,000 to fund debt and pay cost of repairing and restoring streets and avenues, water-works, electric lights and other public property and remove debris from streets following Aug. storm. A. T. Dickey, City Engr. (Lately noted.)

Tex., Houston.—City will grade and pave Drennan St. from German to Josephine St., Milby St. from Engelke to German St., Sherman St. from Orleans St. east 1600 ft., with 5-in. gravel; bids at office City Secy. until Dec. 11; Ben Campbell, Mayor. (See Machinery Wanted—Paving.)

Tex., Laifkin.—Angelina county defeated lately-noted bonds for road construction.

Tex., Luling.—City is reported as considering \$50,000 bond issue to construct roads, to be link in Houston-San Antonio highway. Address The Mayor.

Tex., Marlin.—Falls county is reported as contemplating \$200,000 bond issue for road construction. Address County Comms.

Tex., Paris.—Lamar County Comms. considering application of bituminous binder to 50 mi. completed macadam roads; probably not before spring.

Tex., San Antonio.—Bexar County Comms. let contract Finley Method Co. of San Antonio to spread and maintain 18 mi. of road with tarvia.

Va., Hampton.—State Highway Commr., Richmond, and Elizabeth City County Supervisors, Hampton, let contracts for repairing and shelling with oyster shells road from Wythe Creek into Back River Rd.; Merchants' Transfer Co. to haul shells and John Wood to scrape road; estimated cost \$1500.

Va., Richmond.—Administrative Board let contract K. L. Black & Co. to construct roadway along proposed Riverside Drive from Holly to Church Sts.

Va., Rustburg.—Campbell county will construct ½ mi. bituminous macadam on Salem turnpike between 5th St. extension and Harvey's Store; J. T. McKinney, Supvr., 41 Medical Bldg., Lynchburg, Va., receives bids until Dec. 18; G. P. Coleman, State Highway Commr., Richmond, Va. (See Machinery Wanted—Road Construction.)

SEWER CONSTRUCTION

Ala., Birmingham.—Board Comms. let contract to H. N. Bowdry, Birmingham, to construct sanitary sewers in Norwood; estimated cost \$550; 700 ft. terra-cotta pipe, 200 ft. cast-iron pipe, etc.; Julian Kendrick, City Engr.

Fla., Gainesville.—City, C. Matheson, Mayor, voted \$21,000 bonds to extend sewer system and to pave western part of University Ave. with vitrified brick.

Ga., Tifton.—City contemplates voting on \$100,000 bonds to construct sewer system and water-works, erect high-school building and city hall and increase fire department. Address The Mayor.

La., De Ridder.—City's plans for sewer system are being prepared by Xavier A. Kramer, Magnolia, Miss.; bids will be asked in about 60 days. (Lately noted.)

Md., Baltimore.—City let contract F. B. Beansman & Co., 7 Clay St., to construct lateral sewer and house connections in Dist. 24-B, Sanitary Contract No. 165; 7300 lin. ft. 8-in. to 10-in. sewer; 2400 lin. ft. house connections. (Call for bids lately noted.)

Md., Rockville.—Montgomery County, Bethesda Dist., engaged Ezra B. Whitman, Consult. Engr., 1319 Fidelity Bldg., Baltimore, Md., to make surveys and prepare plans for sewer system for portion of Bethesda Dist.; work will include Imhoff tanks and sprinkling filters; let contract in Jan. or Feb.; Berry E. Clark, Clerk County Comms. (Noted in August.)

Okla., Hallettsville.—City will vote on bonds for construction sanitary sewer system; probable cost \$50,000 for mains and laterals; retained Benham Engineering Co., Oklahoma City, Okla., as Consult. Engr.

Okla., Kusa.—City will vote on bonds to construct sewer system. Address The Mayor.

Okla., Tulsa.—City let contract to J. K. Roach to construct 8-in. laterals; cost about \$1500; T. C. Hughes, City Engr. (Lately noted.)

S. C., Johnston.—City contemplates vote on \$40,000 bonds for sewer and water-works construction; will make surveys. Address The Mayor.

Tenn., Park, R. Station Knoxville.—City let contract J. A. Ahler to construct 2 sewer laterals; cost about \$17,000; W. F. Dick, Chmn. Sewer Committee, will supervise construction; \$10,500 bond issue; property owners to contribute about \$7000. (Call for bids lately noted.)

Tex., Canadian.—City contemplates \$200,000 bond issue to construct sewer system. Oswell Hudson, Mayor.

Tex., Houston.—City will construct storm sewer on Leeland Ave. and Andrew St. from Main to Crosby St., storm sewer on Day and Eagle Aves. from West Alabama Ave. to San Jacinto St. and Hathaway Ave. storm sewer laterals; bids at office City Secy. until Dec. 11; Ben Campbell, Mayor. (See Machinery Wanted—Sewer Construction.)

Tex., San Benito.—City let contract S. S. Dadds to construct sewage-disposal plant; \$5000 bond issue; Duke Jones and F. Campbell, Comms. (Call for bids lately noted.)

Va., City Point.—Richmond Engineering Co. of Richmond, Va., purchased franchise for sewer system.

TELEPHONE SYSTEMS

Ky., Whitesburg.—Southern Bell Telephone & Telegraph Co. (main office, Atlanta, Ga.) will construct long-distance telephone system through Eastern Kentucky coal fields; system will extend via Whitesburg, Sees, Fleming, Haymond, McRoberts and Jenkins, in center of Elkhorn field.

N. C., Henderson.—Home Telephone & Telegraph Co. increased capital from \$500,000 to \$1,000,000.

Okla., Galt.—City will vote Dec. 21 on bonds for lately-noted telephone and electric-light system; plans by W. L. Benham, Consult. Engr., Oklahoma City.

Okla., Waynoka.—Chimney Creek Telephone Co., capital \$1000, incptd. by J. H. Duncan and C. E. Hancock of Waynoka and M. D. Van Huss of Heman, Okla.

Tex., Katy.—Katy Telephone Co. incptd. by W. C. Stockdick, W. F. Freeman and G. A. Porter.

Va., Hopewell.—Hopewell Telephone Co. will be organized to construct telephone system; Temple Brown, Finn Bldg., is interested.

TEXTILE MILLS

Ark., Little Rock.—Cotton Linters.—Little Rock Pickery & Spinning Co., capital \$25,000, incptd.; will build plant for cotton linters; C. C. Cavanaugh, Pres.; Geo. C. McCordell, Treas.; J. N. McNamara, Supt.

Fla., Jacksonville.—Palmetto Fiber Rugs.—Palmetto Products Co., 17 Madison Ave., New York, will establish plant in Union Terminals Bldg., Jacksonville; now install 3 looms, shredding and spinning machine, etc.; later install 30 looms; install 9 spinning and shredding machines in building under construction at Titusville; weekly capacity for first unit Jacksonville plant, 4000 sq. yds., with ultimate annual capacity 3,000,000 to 4,000,000 sq. yds. palmetto fiber rugs; plans ultimate equipment 100 spinning and shredding machines in 10 plants on east coast and St. Johns River; these will spin fiber and ship twine on reels to Jacksonville plant; E. W. Cruikshank, Supt. at Jacksonville. (Previously mentioned under Titusville.)

Fla., Jacksonville.—Palmetto Fiber Rugs.—Palmetto Products Co., 17 Madison Ave., New York, will install plant in Union Terminals Bldg.; 3 looms, shredding and spinning machine, sewing machines, dyeing and stercing outfits, individual electric motor drive, etc.; later install 30 looms; weekly capacity first unit, 4000 sq. yds. palmetto fiber rugs; proposes ultimate annual capacity 3,000,000 to 4,000,000 sq. yds.; plans ultimate equipment 100 spinning and shredding machines in 10 plants on East Coast and St. Johns River; these to spin fiber and ship twine on reels to Jacksonville; install 9 spinning and shredding machines in building under construction at Titusville. (Previously mentioned under Titusville.)

Fla., Titusville.—Palmetto Fiber Rugs.—Palmetto Products Co., 17 Madison Ave., New York, will install 9 spinning and shredding machines in Titusville building, under

construction; this plant previously mentioned proposed; establish main plant (for weaving, etc.) at Jacksonville. (See Fla., Jacksonville.)

Ga., Columbus—Cotton Cloth.—Eagle & Phenix Mills will install 374 automatic looms, replacing 378 old looms; cost \$75,000; let contract to Draper Co., Hopedale, Mass., and Crompton & Knowles Loom Works, Worcester, Mass. (Lately noted to install several hundred looms.)

Ga., Gainesville—Hosiery.—B. H. Merck expects to buy 2-story brick 75x25-ft. building for hosiery mill; initial installation of 25 knitting machines and 5 H. P. electric motor with belt drive; daily capacity 100 doz. pairs hosiery. (Lately reported to establish mill.)

Ga., Rome—Hosiery.—Rome Hosiery Mills will build 100x36 ft. addition; install machinery for production aniline or oxydized black hosiery; ordered this equipment.

N. C., Belmont—Cotton Yarn.—Climax Spinning Co., S. P. Stowe, Treas., has final plans for mill; R. C. Biberstein, Charlotte, Archt.-Engr.; let contract J. D. Grandy, Charlotte, to construct 1-story 53x127-ft. brick and wood building; cost about \$65,000; will rect operatives' cottages to cost about \$40,000; install 21,760 spindles with accompanying machinery to spin fine-combed yarns; cost about \$225,000; purchased greater part of machinery from Whitin Machine Works, Whitinsville, Mass.; will use electric power, obtaining electricity from transmission system of Southern Power Co., Charlotte. (Previously reported organized, having plans for mill, awarding contracts, etc.)

N. C., Cherryville—Cotton Yarn.—Howell Mfg. Co. will double equipment, making plant 5000-spindle mill.

N. C., Draper—Blankets.—German-American Mills (Thread Mills Co., Propr., Monticello, Ind.) will add 75 looms for weaving blankets; awarded contracts for this machinery; will construct additional building.

N. C., Hope Mills—Cotton Cloth.—Eastern Mills Co., capitalization \$500,000, inceptd.; Jno. F. McNair, Laurinburg, N. C., Pres.; W. J. Beattie, Hope Mills, Mgr.; succeeds Hope Mills Mfg. Co.; engaged R. C. Biberstein, Archt.-Engr., Charlotte, to plan building repairs and install new machinery, etc. (W. J. Beattie and others lately reported purchasing Hope Mills Mfg. Co.)

N. C., Statesville—Knitting Yarns.—T. D. Miller, J. W. Kaner and associates will build mill to spin knitting yarns for sweater, underwear and hosiery trade; weekly production 30,000 lbs.; have awarded machinery contracts; construct building next spring.

Okl., Sand Springs—Cotton Goods.—Sand Springs Cotton Mill, capital stock \$300,000, will be organized by Chas. Page and others; erect glass and steel buildings costing \$200,000; install cotton machinery driven by electric power; Cloe Tingley, Engr., Sand Springs; D. Eichenfeld, Archt., Tulsa. (Lately reported planning mill, etc.)

S. C., Woodruff—Cotton Cloth.—Woodruff Cotton Mills will build 4-story 124x80-ft. addition and add 1800 spindles, with accompanying machinery.

S. C., Great Falls—Print Cloth.—Republic Cotton Mills' No. 2 plant will have about 24,000 spindles and 740 looms, with accompanying preparatory machinery; J. E. Sirrine, Greenville, Archt.-Engr., writes to Manufacturers Record further details as follows: "Mill electrically driven, using individual motors, with exception cardroom machinery, which will be group driven; reinforced concrete building 400x133 ft., 3 stories high; warehouse 175x100 ft., 2 stories high, having storage capacity 3000 bales cotton; steam plant for heating and slashing; 250,000-gal. reservoir for fire protection; buildings equipped with fire-protective system, humidifier, heating, etc.; contracts let for erection 50 tenement-houses. (Lately mentioned increasing capital by \$200,000, to build additional mill, etc.)

Tenn., Chattanooga—Cotton Yarn.—G. H. Miller of Chattanooga, A. G. Thatcher of Philadelphia and associates will build mill with equipment 15,000 spindles and accompanying machinery; estimated cost \$250,000; spin fine yarn from sea island cotton. (Lately reported to build \$250,000 mill, etc.)

WATER-POWER DEVELOPMENTS

Tenn., Great Falls.—Tennessee Power Co., Hamilton National Bank Bldg., Chattanooga, approved plans for development water-power of Caney Fork River; will construct hydro-electric plant, including con-

crete dam-forming reservoir, from which water will be conducted by tunnel through mountain to power-house below falls; first unit 10,000 H. P.; ultimate capacity 40,000 H. P. (Previously reported proposed, etc.)

WATER-WORKS

Ark., Beebe.—City will receive bids about Jan. 1 to construct water-works; estimated cost \$15,000; Lund & Hill, Engrs., Southern Trust Bldg., Little Rock, Ark. (Noted in October.)

Ark., Hartford.—City contemplates constructing water-works. Address The Mayor.

Fla., Lake Worth.—City will issue \$20,000 bonds for water-works. Address The Mayor.

Ga., Tifton.—City contemplates voting on \$100,000 bonds to construct water-works and sewer system, erect high-school building and city hall and increase fire department. Address The Mayor.

La., Church Point.—City contemplates voting on bonds to construct water-works and electric-light plant. Address The Mayor.

La., Crowley.—City will issue \$25,000 water-works and electric-light bonds; R. J. Boudreaux, City Clerk.

La., De Ridder.—City's plans for water-works are being prepared by Xavier A. Kramer, Magnolia, Miss.; bids will be asked in about 60 days. (Lately noted.)

Md., Baltimore.—City contemplates installing water meters in all buildings except 2-story dwellings with frontage of 12 ft.; estimated cost, \$1,500,000; Robt. L. Clemmitt, Acting Water Engr.

Md., Hagerstown.—Washington County Water Co., Albert Heard, Gen. Mgr., will issue lately-noted additional \$500,000 stock; will expend about \$350,000; construct new reservoir, 250,000,000 to 400,000,000 gals. capacity; construction to include earth and concrete dam across ravine in mountain; David H. Whitmer, Philadelphia, Pa., designer of reservoir; probably not ready for bids before spring.

Mo., Lee's Summit.—City will let contract Dec. 15 to construct lately-noted water-works; 70,000 gals. capacity; concrete reservoir 50x100x16; plant 25x37 ft.; about 8 m. pipe; install motor, oil engine and triplex pump; \$46,000 available; Hendrix, Kent & Lowry, 715 Reserve Bank Bldg., Kansas City, Mo., Engrs. (See Machinery Wanted—Water-works.)

Okl., Clinton.—City voted \$6000 bonds for investigation work on lately-noted water supply; contemplate complete plant to cost \$100,000, for which additional bonds may be voted later; supply from wells or impounding reservoir; Benham Engineering Co., Engr., Colcord Bldg., Oklahoma City.

Okl., Commerce.—City will vote Dec. 23 on \$40,000 bonds for lately-noted water-works; Benham Engineering Co., Engr., Colcord Bldg., Oklahoma City.

Okl., Henryetta.—City voted \$100,000 bonds to improve and extend water-works; will extend water main to North Canadian River, 5 m. from present reservoir; water will be carried in 12-in. main from river to filtration plant with capacity of 1,000,000 gals. daily; probably 2 units of plant will be built at once and others added as demand for water increases; M. A. Berman, City Engr., and associates prepared plans. (Lately noted.)

S. C., Johnston.—City contemplates vote on \$40,000 bonds for water-works and sewer construction; will make surveys. Address The Mayor.

Tenn., Knoxville.—City contemplates \$500,000 water-works bond issue. John E. McMillan, Mayor.

Tex., Galveston.—City votes Jan. 18 on \$200,000 bonds to repair, restore or submerge water mains across Galveston Bay. (See Road and Street Work.)

Tex., Houston.—City will construct power-house and reinforced concrete settling tank, pipe lines, etc., at North Main St. pumping plant; bids at office of City Secy. until Dec. 20; Ben Campbell, Mayor. (See Machinery Wanted—Tank (Concrete), etc.)

Tex., Trinity.—City engaged H. S. Wilder, Consult. Engr., Houston, to prepare plans and submit report estimating cost of complete water system. (Lately noted.)

WOODWORKING PLANTS

Miss., McComb—Veneer.—Hinton Veneer & Lumber Co., capital \$10,000, organized by J. H. Hinton and others; will build plant; ordered machinery.

Miss., Valden—Chairs.—Abner Armstrong will establish factory for scroll and cane-

seat chairs; also brooms; has building; has installed engines and boilers; needs pump. (See Machinery Wanted—Pump; Chair Machinery; Broom Machinery.)

Tex., Beaumont—Barrel Staves.—Sabine Stave Co. organized by H. W. Biggs and M. C. Trumble of Womble, Ark., to manufacture barrel staves; at present will ship staves to Memphis, Tenn., to be manufactured into barrels; acquired old plant of Beaumont Column Co. on Neches River; also contracted for 40,000,000 ft. standing oak on Sabine River to be manufactured into staves.

Va., Charlottesville—Fruit Packages.—Charlottesville Box & Basket Co., L. A. Funk, V. P., Alexandria, Va., will establish plant to manufacture fruit packages. (Lately noted inceptd. with \$15,000 capital.)

W. Va., Glengary—Staves and Barrels.—W. L. Brannon is reported to establish plant to manufacture staves and apple barrels.

FIRE DAMAGE

Ala., Guin.—Gus Hallman's residence; loss \$3000.

Ala., Montgomery.—The Bootery; loss \$5000.

Ala., Marbury.—Smith & Northington's cottonseed-house.

Ark., Malvern.—Jack Alexander's residence; loss \$3500.

Ark., Dumas.—C. R. McKenna's gin; estimated loss \$5000.

Ark., Portland.—Residence of Mrs. J. J. Cone of Snyder, Tex.; estimated loss \$5000.

Ark., Yarbrough.—Phoenix Cotton Oil Co.'s gin.

Fla., Bradentown.—Seabreeze Inn, J. P. Petroutsa, owner; loss \$8000.

Ga., Ellaville.—Central of Georgia R. R.'s depot; C. K. Lawrence, Ch. Engr., Savannah.

Ga., Columbus—Cotton Cloth.—Muscooke Mfg. Co. is reported to enlarge mill at cost several hundred thousand dollars; J. E. Sirrine of Greenville, S. C., Archt.-Engr.

Ga., Douglas.—Corn's Barber Shop, loss \$4000; Boston Store, loss \$5000; Sapp's Pharmacy, loss \$1000.

Ga., Marshallville.—Miss Mary Niles' residence; loss \$5000.

Ga., Pavo.—Byron Parish's residence.

Ga., Silver Creek.—T. J. Bradshaw's residence.

Ky., Bardstown.—Morgan Gilkey's residence; loss \$3000.

Ky., Grayson.—Z. T. Hall's store; Robert Davis' store; Commercial Bank Bldg.; Citizens' Bank Bldg.; Jacob Bros.' store; Hubbard Poolroom; L. W. Woods' warehouse; J. W. Lusby's Normal School building; Philip Melvin's residence; Carter County News plant; Hanlon Restaurant; total loss, \$25,000.

Ky., Louisville.—Will B. Miller's lumber yard; Mrs. Allie Pate's residence; L. G. Stites' residence; loss \$10,000 to \$15,000.

Ky., Paducah.—James C. Utterback's residence in Afton Heights; loss \$13,000.

Ky., Pine Knot.—C. Cordell's store; J. W. Morgan's store; Postoffice; Dr. R. C. Slevier's office; D. E. McQuary's office; Chitwood Barber Shop; loss \$10,000.

Ky., Providence.—J. M. Prather's barn; loss \$6000.

La., Alexandria.—Residences owned by John L. Lacroix (8), Mrs. John Powers (12), Mary Fontenot (6), Gus Israel (3), Mrs. Thos. Treadway (4), Jake Levy (1), Basil Hall (1), Wm. Hughes (1), Campo Samona (1); total loss \$30,000.

La., Crichton.—Buildings occupied by Crichton Drug Co., Crystal Cafe, B. H. Vaughn Pool Hall, Sam Gold Merchandising Co., Dixie Theater, Taylor's Pool Hall, Jacob Weinstein Merchandising Co., W. H. Moorefield, H. L. Sauer, French Restaurant; loss \$15,000 to \$20,000.

La., Lafayette.—B. J. Pellerin's residence; residence owned by Drs. G. A. and F. R. Martin, occupied by Mrs. O. P. Guilbeau; C. J. McNaspy's residence; Adonis LeBlanc's residence, occupied by S. F. White; S. R. Blossast's residence; total loss \$25,000.

La., DeRidder.—J. S. Roberts' building on E. Front St.; loss \$18,000.

La., Lake Charles.—H. E. Buck Brick Mfg. Co.'s lumber mill and brickyard not burned in lately-noted fire; lost dry-lumber shed and office building.

Miss., Columbus.—W. D. Humphries' residence at 27 S. 7th St.; loss \$3000.

Miss., Brookhaven.—B. P. O. E. Home and 2 residences; loss about \$12,000.

Miss., Gulfport.—J. F. Owen's residence, owned by S. M. Tracy.

Miss., Shannon.—J. B. Abernathy's residence.

Mo., Pilot Grove.—J. J. Maddox's residence; loss \$5000.

N. C., Clayton.—G. U. Baucum's residence.

N. C., Lincolnton.—J. A. Clements' residence near Lincolnton.

N. C., Princeton.—Calvin A. Holt's residence and barn; loss \$8000.

Okl., Drumright.—Gunsburg & Foreman's barn, toolhouse, office and 2 residences.

S. C., Aiken.—H. U. Woodward's ginhouse and machinery.

S. C., Anderson.—Mary Miller Earle's residence; loss \$3500.

S. C., Greenville.—Farmers' Oil Mill Co.'s gin.

S. C., Darlington.—W. L. Ward's residence on Timmons Rd.; loss about \$6000.

S. C., Lykesland.—W. M. Rawl's ginhouse; loss \$1800.

S. C., Shiloh.—Hugh S. Wallace's gin; estimated loss \$1800.

S. C., Starr.—W. L. Mouchet's ginhouse.

Tenn., Columbia.—First Presbyterian Church; loss \$30,000. Address The Pastor.

Tenn., Memphis.—Mrs. M. E. Thorn's residence at 1662 Caruthers Ave.; loss about \$5000.

Tenn., Memphis.—Leslie A. Thornton's dwelling at 53 Barksdale St.; loss \$5000.

Tenn., Trezevant.—Mrs. Ed Wilder's residence in 19th Dist.

Tenn., Westmoreland.—Drug store of Dr. Walden and Mr. Gent, Parish Hotel, Dennis Watkins' barber shop.

Tex., Ammansville.—F. E. Pargue's gin.

Tex., Boyd.—Boyd Gin Co.'s plant; loss \$13,000.

Tex., Cleburne.—Wm. L. Ewing's residence; loss \$3000.

Tex., Dallas.—St. Raul Hotel, building owned by Bookhout & Bookhout; loss about \$25,000.

Tex., Dallas.—Two dwellings at 819 21 N. Jefferson St., owned by Jake Metzler; loss \$6000.

Tex., Denton.—W. J. Waggoner's 2 dwellings on Bell Ave.; loss about \$6000.

Tex., Denison.—Mrs. F. W. Glover's boarding-house.

Tex., Denton.—Joe L. Mercer's dwelling; loss \$2500.

Tex., Fort Worth.—Two barns, creamery, pumping plant and 6-room dwelling at dairy owned by Hunter Wilson, J. J. Peacock, Mgr.; total loss \$14,000.

Tex., Georgetown.—Belford Lumber Co.'s warehouse; loss about \$6000.

Tex., Harleton.—R. W. Taylor Feed Co.'s building and cotton warehouse; reported loss \$50,000.

Tex., Hillsboro.—T. B. Bond Drug Co.'s building; loss \$50,000 to \$75,000.

Tex., Memphis.—Seago & Simmons' gin; loss \$6000.

Tex., Payne.—Texas Traction Co.'s substation; loss \$25,000 to \$30,000.

Tex., Sherman.—Gray-Mabry Grocery Co.'s store, building owned by Mrs. Belle P. Muse; loss \$6500.

Tex., Temple.—Winbourne Pearce's garage and barn; loss \$2200.

Tex., Uvalde.—J. W. Graham's residence; loss \$2000.

Tex., Yoakum.—A. F. Monk's store; W. P. Carroll's meat market; Felder Estate Building; loss about \$10,000.

Va., Bristol.—Dr. Geo. E. Wiley's residence; loss \$3000.

Va., Greenville.—H. O. Campbell's flour mill; loss \$10,000 to \$15,000.

Va., Ridgeway.—E. L. Knight's building.

Va., Staunton.—W. J. Neff & Co.'s store, owned by Mrs. J. E. B. Stuart of Norfolk, Va.; loss \$20,000.

Va., Willoughby Beach.—Willoughby Beach Hotel, owned by F. J. Crawford; loss about \$45,000.

W. Va., Clarksburg.—Walker House, owned by Judge C. W. Lynch of State Supreme Court; loss \$35,000.

W. Va., Williamson.—Vaughan Hotel; Jake Levine's store; loss \$35,000.

WRECKED BY EXPLOSION

Miss., Columbus.—Jas. Cox's gin.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Fla., Jacksonville.—Fred Boyd will erect 2-story frame apartment-house on Osceola St.; cost \$23,000.

Fla., Tampa.—Harrison & Black are having plans prepared by Fred J. James, Tampa, for apartment and store building at Lafayette and Parker Sts.; 5 stories; 108x115 ft.; brick, tile and concrete; gravel composition roof; concrete floor; steam heat; city electric light; vault lights and concrete walk; electric passenger and freight elevator; cost about \$75,000. (Noted in Nov.)

Ga., Atlanta.—F. R. S. Realty Co., Milton Strass, Pres., 523 Hurt Bldg., has plans by H. B. Hammond, 1429 Candler Bldg., Atlanta, for apartment-house at Juniper and 3d Sts.; brick; tar and gravel roof; wood floor; steam heat; electric light; tile walk; cost \$35,000; P. J. Hardee, Trust Co. of Georgia Bldg., Atlanta, supervisor. Address Mr. Strauss. (Noted in Nov. contract let to Mr. Hardee.)

Mo., Kansas City.—H. L. Lawin will erect store and flat. (See Stores.)

Mo., Kansas City.—A. H. Nevers will erect apartment, store and theater building. (See Theater.)

Mo., St. Louis.—Castleman Apartment Co. will erect 3-story tenement-house at 2907 Grand St.; cost \$55,000; construction by owner.

Tenn., Nashville.—John T. Lelleyett has plans by Geo. D. Waller, 57 Arcade, Nashville, for apartment-house at 31st and Hendrich Sts.; 4 apartments; 6 rooms each; brick walls; stone trimmings; slate roof; frame floor construction; low-pressure steam heat; cost about \$15,000; bids opened Dec. 4. Address Archt. (Lately noted.)

Tex., San Antonio.—Ed. Gillen will erect 12-room apartment-house on Woodlawn Ave.; cost \$12,000.

Va., Richmond.—Muhleman & Kayhoe will erect 2-story brick tenement-house; cost \$6250.

W. Va., Logan.—B. L. Holland will erect residence; 2 stories; 12 rooms.

ASSOCIATION AND FRATERNAL

La., Alexandria.—Alexandria Council No. 1134, Knights of Columbus, will erect 3-story building.

Md., Hagerstown.—S. M. Bloom will erect Y. M. C. A. building.

Okla., Muskogee.—A. F. and A. M. will erect temple; cost \$75,000.

Tenn., Jackson.—Y. M. C. A. is having plans prepared by R. A. Heavner, Jackson, for additional dormitory floor; brick; probably steam heat and electric light; cost \$13,000. Address Y. M. C. A., Jackson. (Lately noted.)

Tenn., Memphis.—Shrine Golf Club inceptd. by R. R. Schuyler, J. F. Ramier, Buford M. White and others; will erect clubhouse near Overton Park; cost \$5000 to \$10,000.

Tex., Beaumont.—Beaumont Aerie No. 116, Fraternal Order of Eagles, plans to erect building; probably 2 stories; brick.

Tex., Torrell.—Odd Fellows' Lodge has plans for building; will soon invite bids.

BANK AND OFFICE

Fla., Miami.—Chaille Candy Co. will erect office building and warehouse.

Md., Baltimore.—Immediate Benefit Life Insurance Co. is having plans prepared by Louis Levi, Munsey Bldg., Baltimore, for office building at 101-3-5 German St.; 4 stories and basement; 66x72 ft.; fireproof; steel and concrete; front 1st floor faced with granite; above, terra-cotta; side faced with brick; slag roof; probably steam heat; vaults on all floors; 2 electric elevators; cost about \$79,000; plans ready about Jan. 1. (Noted in Oct.)

Md., Baltimore.—Immediate Benefit Life Insurance Co., Moses Rothschild, Pres., 900 N. Eutaw St., is having plans prepared by Louis Levi, Real Estate Trust Bldg., Philadelphia, Pa., for office building on German St.; site 62.5x72 ft.

Okla., Drumright.—Gunsburg & Foreman will rebuild offices, etc., reported damaged by fire. (See Miscellaneous.)

S. C., Camden.—Crocker-Savage Co. received bids to erect office building; 2 stories; 142x149 ft.; brick and stone; tile roof; steam

heat; cost about \$23,000; R. W. Mitchell, Archt., Camden.

Tex., El Paso.—Gus Zork purchased site at Texas and Kansas Sts. and is reported to erect five or six-story concrete building.

Tex., Runge.—First State Bank will erect brick bank and office building.

Va., City Point.—Thos. Temple, County Treas., will erect 3-story office and store building. (See Stores.)

Va., Norfolk.—M. McKevitt has plans for office building on City Hall Ave.; 6 stories, brick and terra-cotta; marble trimmings; fireproof construction; 104x26 ft.; Jos. W. Lee, Archt., Norfolk; will invite bids within 10 days.

CHURCHES

Ga., Americus.—First M. E. Church has plans by W. A. Rayfield & Co., Birmingham, for building; 60x90 ft.; brick; stone trim; metal shingle roof; pine floor; steam heat; electric light; cost about \$15,000 bids opened in spring. Address Archts. (Noted in Nov.)

Ga., Manchester.—Presbyterian Church will erect building; seating capacity 200; Mrs. Orr, Secy. Bldg. Com.

Ga., Savannah.—George H. Miller has permit to rebuild 1-story frame church at Rockefeller and Ott Sts.; metal roof.

Ky., Lexington.—Porter Memorial Church will erect Sunday-school building; 2 stories; 30x40 ft.; cost \$40,000; bids received in spring; Frank L. Smith, Archt., Lexington.

Md., Baltimore.—Monument St. M. E. Church is having plans prepared by Oliver B. Wight, 1122 Munsey Bldg., Baltimore, for addition to building on Monument St. between Alsquith and Ensor Sts.; 2 stories; alterations to present building.

Miss., Brookhaven.—Methodist Church plans to erect building; brick; details not determined; S. E. Moreton, Dr. Henry Flowers, A. B. Burlew and others, Com.

Mo., Blue Springs.—First Baptist Church has plans by W. A. Rayfield & Co., Birmingham, for building; 50x90 ft.; brick; asbestos shingle roof; inclined pine floor; hot-air heat; electric light; cost about \$10,000; bids taken in spring. Address Archts. (Noted in November.)

N. C., Durham.—Baptist Church organized at Bragtown; plans to erect building; Rev. B. V. Ferguson, Chrmn. of Com.

Tex., Alpine.—First Baptist Church, Rev. Jas. T. Tartt, pastor, has plans by W. A. Rayfield & Co., Birmingham, for building; 50x90 ft.; ordinary construction; metal roof; inclined pine floor; hot-air heat; electric light; cost about \$9000. Address Archts. (Previously noted.)

Tex., Cuero.—Cuero Presbyterian churches will erect building; M. D. Bennett, J. W. Sanders and others, Com.

Tex., Yoakum.—Baptist Church contemplates extensive improvements to building. Address The Pastor.

Tex., Victoria.—Lady of Lourdes German Catholic Church will erect building to replace structure lately noted burned; cost about \$50,000. Address The Pastor.

CITY AND COUNTY

Ga., Tifton.—City Hall.—City contemplates voting on \$100,000 bonds to erect city hall, etc. Address The Mayor. (See Waterworks.)

Mo., Kansas City.—Fire and Police Station. City will receive plans from architects for combined police and fire station in Country Club Dist. and near 60th St. and Swope Parkway. Address The Mayor.

N. C., Durham.—Jail.—County Comms. open bids Jan. 11 to erect courthouse and jail. (See Courthouses.)

Okla., Okmulgee.—Jail.—County plans to vote about Dec. 28 on \$150,000 bonds to erect courthouse and jail. Address County Commissioners.

Tenn., Springfield.—Jail.—Robertson County Comms., A. J. Harris, Chrmn. Bldg. Com., receives bids until Dec. 16 to erect jail and jailer's residence; plans and specifications on file in office of County Judge.

Tex., Dallas.—Dallas County Comms. will erect detention home on county poor farm.

Tex., George West.—Jail.—George West receives plans and specifications for courthouse and jail. (See Courthouses.)

Va., Lynchburg.—Armory.—City receives bids until Dec. 9 at office of Wm. R. Burnham & Co., Archts., Rooms 23-24-25 Scott Bldg., Birmingham, for addition to armory for The Musketeers. (Lately noted.)

COURTHOUSES

La., Jennings.—Jefferson Davis Parish Police Jury is having plans prepared by W. L. Stevens, Baton Rouge, for courthouse; Bedford stone and terra-cotta; 2½ stories; about 90x120 ft.; cost \$75,000; will probably call for bids in Jan.

Mo., Galena.—Stone county defeated \$35,000 bonds to erect courthouse. (Lately noted.)

N. C., Durham.—County Comms. open bids Jan. 11 to erect courthouse and jail; 5 stories; 140x70 ft.; steel frame; stone and granite; tile roof; steel and concrete floor; low-pressure steam heat; electric light; 2 electric elevators; cost \$180,000 to \$250,000; Milburn, Heister & Co., Archts., Union Savings Bank Bldg., Washington, D. C. (Lately noted.)

Okla., Okmulgee.—County plans to vote about Dec. 28 on \$150,000 bonds to erect courthouse and jail. Address County Commissioners.

Tex., George West.—George West receives plans and specifications for combination courthouse and jail; 3 stories; 1st story, offices; 2d story, courtrooms; 3d story, jail; fireproof throughout; basement; reinforced concrete and brick; bids opened Feb. 1 at San Antonio (Tex.) Loan & Trust Co.

Tex., Lubbock.—Sam T. Davis, County Clerk, receives bids about Feb. 25 to erect courthouse; 3 stories; 80x100 ft.; concrete foundation; brick backing and stone facing for wall construction; reinforced concrete floors, tile partitions and cut-stone exterior finish; cost about \$100,000; Rose & Peterson, Archts., Kansas City, Kans. (Previously noted.)

DWELLINGS

Ala., Anniston.—Thos. E. Kilby and W. A. Darden will erect 2 houses on Christine St. and 1 on Woodstock St.

D. C., Washington.—Chas. H. Taylor, Gotham Apt., will erect dwelling at 5767 Oliver St. N. W.; 28x38 ft.; stone and pebble-dash; slate roof; white-oak floor; Ideal steam heat, by American Radiator Co., Washington office, 316 Union Trust Bldg., head office, Chicago; cost \$7000; construction by owner.

Fla., Jacksonville.—Glen St. Mary Nursery Co. will erect residence, greenhouse and garage at College and Copeland Sts.; brick; cost \$7000.

Fla., Miami.—F. H. Rand will erect 3 stone dwellings in Miramar; cost \$6000.

Fla., Miami.—Bailey-Millam Co. will erect several dwellings.

Fla., Orlando.—M. O. Overstreet, Prest. People's National Bank, will erect residence at West St. and Central Ave.; soon let contract.

Fla., Orlando.—H. C. Nye will erect two 8-room residences.

Fla., Ruskin.—Edward C. Clark will erect residence.

Fla., St. Petersburg.—W. P. Fuller will erect bungalow in Davista; 7 rooms; 2 stories.

Fla., Tavares.—T. T. Hux will erect 2 residences.

Fla., St. Augustine.—I. G. Carmack, 36 Charlotte St., will supply information regarding bids to excavate foundation for cottage. (See Machinery Wanted—Concrete Blocks.)

Ga., Atlanta.—Ross Hunter has plans by S. D. Trowbridge, 522 Grant Bldg., Atlanta, for residence; 2 stories; tile roof; furnace heat; hardwood and tile floors; cost \$4000.

Ga., Atlanta.—H. W. Dillon has permit to erect 1-story bungalow at 710 E. North Ave.; frame; cost about \$5000.

Ga., Atlanta.—M. L. Rauschenberg will erect 1-story brick-vener dwelling at 255 Lucile Ave.; cost \$3000; day labor.

Ga., Fort Valley.—T. M. Anthoine will erect residence; completion by Jan. 1.

Ga., Savannah.—John K. Culver will erect 2-story frame residence.

Ky., Elizabethtown.—J. A. Baird will erect residence.

Ky., Elizabethtown.—Horace E. McCullum will rebuild burned residence and store. (See Stores.)

Ky., Louisville.—J. J. Schaefer will erect 2 frame dwellings at 901-03 S. 32d St.; cost \$3000.

Ky., Louisville.—Phillip S. Longest will

erect brick veneer dwelling at Longest and Willow Sts.; cost \$5000.

Ky., Louisville.—Phillip S. Longest will erect brick-vener dwelling at Longest and Willow Sts.; cost \$5000.

La., New Orleans.—W. R. Gilbert will erect 3 dwellings on Pine St.

Md., Baltimore.—G. Stanley Stirling is having plans prepared by Stanislaus Russell, 2900 Clifton Ave., Baltimore, for residence on Palmer Ave. near Oakley Ave.; 2½ ft. wide.

Md., Baltimore.—Jas. B. Yeatman, 60 Park Heights Ave., will erect 16 dwellings at Windsor and Longwood Aves.; 21x34 ft.; 2 stories; brick; cost \$30,000; construction by owner.

Md., Baltimore.—Northwest Real Estate Co., Geo. R. Morris, Gunther Bldg., secured permit to erect three 2½-story dwellings; one each on Chatham Rd., Allendale Ave. and Bateman Ave.

Md., Baltimore.—W. T. Childs, 16 W. 20th St., has plans by F. E. Beall, 306 St. Paul St., Baltimore, for 20 dwellings at Baker St. and Moreland Ave.; 2 stories; 14x51 ft.; brick; slag roof; tile baths and porches; steam heat; electric light; cost \$35,000; construction by owner.

Md., Baltimore.—Globe Realty Co. has plans by Stanislaus Russell, 2900 Clifton Ave., Baltimore, for 14 dwellings at 2913-14 Winchester St.; 2 stories; ten 14x50, two 14x50, two 16x50; brick; slag roof; steam heat; cost \$25,000; construction by owner.

Md., Baltimore.—Frank Novak, 74 Kenwood Ave., has plans by Otto G. Simonson, Maryland Casualty Tower, Baltimore, for dwelling and garage at Harford and Mayfield Aves.; 1 story; dwelling 43.5x41.4 ft.; garage 28x24 ft.; brick; tile roof; hot-water heat; cost \$6500; construction by owner.

Md., Baltimore.—L. B. Carton, Mgr. of Swift & Co., has plans by Mettu & White, 32 N. Charles St., Baltimore, for residence at Charles-St. and Malvern Aves.; contractors estimating are: Cowan Building Co., 106 W. Madison St.; G. Walter Tovell, Eutaw and McCulloh Sts.; Gladfelter & Chambers, 729 Roland Ave.; W. E. Harn Co., 213 N. Calvert St.; T. B. Stanfield, 212 Clay St.; W. E. Burnham, Law Bldg.; M. C. Davis, 633 N. Calvert St.; all of Baltimore; bids due Dec. 8.

Md., Baltimore.—Dr. R. T. Abercrombie has plans by Edward L. Palmer, Jr., 408 Roland Ave., Roland Park, Md., for residence at Guilford; 2½ stories; 45x30 ft.; brick; slate roof; steam heat; cost about \$11,000; contractors estimating are: Gladfelter & Chambers, 729 Roland Ave.; G. Walter Tovell, Eutaw and McCulloh Sts.; E. G. Turner, Bateman Ave.; Cowan Building Co., 106 W. Madison St.; John Waters, 23 E. Center St.; Henry Smith & Son Co., German and Light Sts. (Lately noted.)

Md., Baltimore.—Dr. Lewellys F. Barker has plans by Edw. L. Palmer, 408 Roland Ave., Roland Park, Md., for residence in Guilford; 2½ stories; brick and stucco; contractors estimating are: Cowan Building Co., 106 W. Madison St.; Gladfelter & Chambers, 729 Roland Ave.; E. G. Turner, Bateman Ave.; G. Walter Tovell, Eutaw and McCulloh Sts.; all of Baltimore; Roland Park Co., Roland Park, Md.; bids opened Dec. 16. (Lately noted.)

Md., Baltimore.—Charles Reeder is having plans prepared by Clyde N. Friz, 1523 Munsey Bldg., Baltimore, for residence at Ten Hills; 2½ stories; brick; cost \$8500.

Md., Baltimore.—Mrs. Sarah R. Owens has plans by Oliver B. Wight, Munsey Bldg., Baltimore, for residence on Charles St. near 32d St.; 3 stories; brick; composition roof; hardwood floors; steam heat; electric light; hot-water heaters; marble, tile and sheet metal work; cost \$10,000 to \$12,000; contractors estimating are: C. E. Stubbs, 518 Equitable Bldg.; C. W. Littleton & Son, 4313 Liberty Heights Ave.; Consolidated Engineering Co., 243 Calvert Bldg.; C. W. Brown; Singer-Pentz Co., 600 Equitable Bldg.; G. Walter Tovell, Eutaw and McCulloh Sts.; Richardson & Williams, 847 Equitable Bldg.; Raymond Chambers, 36th St. and Roland Ave.; all of Baltimore; bids due Dec. 8.

Memphis, Tenn.—E. C. Cook has permit to erect dwelling at 1807 Peabody Ave.; 2 stories; 11 rooms; stone; cost \$7000.

Mo., Kansas City.—J. Z. Miller, Reserve Bank, will erect dwelling at Fifty-seventh St. and Bellevue Ave.

Mo., Kansas City.—Mrs. Mary E. Long, 2636 Brooklyn Ave., will erect dwelling at Morningside Drive and Sixty-first St.; cost \$10,000.

Mo., Kansas City.—D. J. Miller will erect 2-story stucco dwelling at 4148 Michigan St.

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and 2-story brick dwelling at 1812 E. 42d St.; cost \$4500.

Mo., Kansas City.—Wm. G. Matthews will erect frame residence; 2 stories; cost \$3500.

Mo., Kansas City.—Northeast Realty Co. will erect three 1½-story stucco dwellings; cost \$7500.

N. C., Tryon.—Dr. W. W. Gray purchased lot on Melrose Circle and will erect bungalow.

Okla., Drumright.—Gunsburg & Foreman will rebuild 2 residences noted damaged by fire. (See Miscellaneous.)

Okla., Tulsa.—Steger & Clisco secured permit to erect four 2-story frame dwellings and four 1-story frame garages at Santa Fe and Easton Sts.; total cost \$19,400.

Okla., Tulsa.—Annie Archer secured permit to erect two 1-story frame dwellings on N. Main St. to cost \$4000.

Okla., Tulsa.—Stebbins Investment Co. will erect three 1-story frame dwellings on S. Quaker St. to cost \$3000.

S. C., Camden.—Dr. S. F. Brasington is having plans prepared by R. W. Mitcham, Camden, for dwelling; 2 stories; frame; cost about \$3500; plans ready Jan. 1.

S. C., Columbia.—R. B. Herbert, Jos. A. Walker and W. C. McLain will erect residences; former 2 stories; 8 rooms; frame; cost \$7000; Urquhart & Johnson, Architects, Columbia.

S. C., Camden.—John E. Rhame is having plans prepared by R. W. Mitcham, Camden, for dwelling; 2 stories; frame; cost \$3000; plans ready Feb. 1.

S. C., Charleston.—J. A. Storer will erect dwellings at 69 and 70 Gibbs St.; cost \$4400.

S. C., Columbia.—W. E. McGee will erect residence; 2 stories; 8 rooms; frame and stucco; single roof; cost about \$4000; Wilson & Sompayrac, Architects, Columbia.

Tex., San Antonio.—C. C. Williams will erect 2-story dwelling on Queensboro Court; cost \$3000.

S. C., Spartanburg.—A. S. Libbey will erect residence; 8 rooms; cost \$3500.

Tenn., Athens.—E. L. Delay will erect bungalow.

Tex., Austin.—E. C. Berwick will erect one-story dwelling at 615 Oakland Ave.; frame; cost \$3000.

Tex., El Paso.—R. E. McKee secured permit to build brick bungalow in East El Paso addition to cost \$2500 and 1-story store and dwelling at 608½ South El Paso St. to cost \$2500.

Tex., El Paso.—G. A. Fox will erect residence in Alexander addition.

Tex., El Paso.—Cassidy & Neel will erect 3 bungalows on Main St., Sunset Heights, and Nevada St.; cost \$26,000.

Tex., Houston.—G. A. Berwin will erect residence on Kipling St.; cost \$3000.

Tenn., Nashville.—P. J. Kane has plans by O. J. Billis, Nashville, for bungalow on 5th Ave.; brick.

Tenn., Nashville.—W. H. Hyronemus will erect 1-story brick residence at 1508 8th Ave. S.; cost \$3000.

Tex., San Antonio.—W. A. Baity will erect 7 dwellings on Agarita St., Wilkins and Peck Aves.; cost \$15,050.

Va., Hopewell.—E. I. du Pont de Nemours & Co. leased Eppes property between Hopewell and City Point and will erect number of cottages.

Va., Norfolk.—Goldsborough Serpell has plans by Jas. W. Lee, Norfolk, for addition to dwelling at Westover Ave. and Theford St.; 30x80 ft.; slate roof; direct and indirect hot-water heat; electric light; bids opened Dec. 4. (Lately noted.)

Va., Petersburg.—Tri-County Building Corporation, E. H. Patterson, Secy., contemplates erection 20 to 25 dwellings; cost \$1500 to \$4000 each. (See Machinery Wanted—Building Plans.)

Va., Norfolk.—A. F. Penzold is having plans prepared by Brown & Tazewell, Norfolk, for dwelling on Colonial Place.

Va., Richmond.—A. L. McClellan will erect 2½-story brick dwelling at Pinehurst.

Va., Richmond.—P. J. Beattie will erect store and dwelling. (See Stores.)

Va., Richmond.—Lella C., Mamie B. and Ellen Jones will erect 2-story brick dwelling at 628 N. 8th St.; cost \$6000.

Va., Richmond.—O. L. Albertson will erect 2-story frame dwelling at 21st and T Sts.; cost \$3000; 10 rooms; tin roof; rift-pine floors; hot-water heat; electric lighting; plans and construction by Walter Douglass, 150 Rogers St., Richmond. Address Owner at 1222 N. 21st St.

Va., Richmond.—Thos. B. McAdams has plans by Duncan Lee, Richmond, for residence in William Byrd Park; 2 stories and attic; brick and stucco; 57x71.9 ft.; colonial style; cost \$29,000.

GOVERNMENT AND STATE

D. C., Washington.—Art.—Smithsonian Institution, Chas. D. Walcott, Secy., will erect Freer art building; stone construction; cost \$1,000,000; Chas. A. Platt, Archt., 11 E. 24th St., New York; construction probably begins in spring.

HOSPITALS, SANITARIUMS, ETC.

Ark., Fort Smith.—St. Edward's Infirmary has plans by A. Klingensmith, Fort Smith, for hospital; cost \$89,000; Rev. Father Horan in charge.

Fla., Fort Lauderdale.—Civic Dept. of Woman's Club is promoting hospital for Broward county; Mrs. Daniel Klune and others are interested.

Ga., Savannah.—Telfair Hospital will erect addition to hospital; plans include solarium, plumbing, etc.; Henrik Wallin, Archt., Savannah.

Mo., Kansas City.—City will receive plans from architects for home for nurses and internes at General Hospital. Address The Mayor.

Tenn., Chattanooga.—City and Hamilton county will erect pella hospital near Orchard Knob. Address The Mayor or County Commrs.

Tex., Austin.—Miss Katie Duffan, Supt. Confederate Women's Home, receives bids until Dec. 23 to erect hospital building; 2 stories and basement; plans obtainable from Atlee B. Ayres, Archt., Bedell Bldg., San Antonio.

Tex., College Station.—Agricultural and Mechanical College receives bids until Dec. 22 to erect hospital and dairy barn. (See Schools.)

HOTELS

Ark., Searcy.—C. E. Myrick is interested in organizing company to erect hotel; cost about \$40,000.

Fla., Miami.—McAllister Hotel Co. Incptd. with \$300,000 capital stock; E. C. McAllister, Pres.; M. A. Leddy, V.-P.; R. C. Hunt, Secy.-Treas.; will erect 175-room hotel; fire and stormproof; 8 stories and roof garden; 100x40 ft.; steam heat; electric lights; gas; terra-cotta, tapestry brick, granite and limestone; mail chute; electric elevator; bids opened about Dec. 30; Frohling & De Garmo, Architects, Miami. (Lately noted.)

Fla., Miami.—Hotel Plaza Co., J. W. Chase, Pres., will erect addition to Hotel Plaza; 68 rooms with private baths; also expending \$8000 for improvements; will repaint, remove stucco from exterior and replace with waterproof cement stucco, etc.

Fla., Sarasota.—Watrus Hotel will expend \$10,000 to improve and enlarge; will change exterior and add number of rooms and bath.

Fla., Tarpon Springs.—G. E. Nobilit contemplates erecting hotel or garage at E. Tarpon Ave. and King St.

Ga., Macon.—Curran R. Ellis is reported preparing plans for hotel; 4 stories; pressed brick, with stone veneering; tile flooring; steam heat.

Ga., Macon.—J. S. Shingler, Ashburn, Ga., is reported to erect hotel on Cherry St. between Broadway and 5th Sts.; 100 rooms; cost about \$120,000; plans in progress.

Ky., Danville.—Danville Hotel Co. receives bids about Jan. 1 through W. S. Van Dalsen, Archt., Masonic Bldg., Danville, for hotel; 5 stories; 78x100 ft.; estimated cost \$60,000.

Ky., Dry Ridge.—Lake View Sanatorium & Hotel Co. has plans by B. C. De Camp, Cincinnati, for addition to Kentucky Carlsbad Springs Hotel on Dixie Highway; 24x110 ft.; frame; ironclad; galvanized-iron roof; wood floor except in 2 bathrooms; elevator for 2 stories; date of opening bids not set. Address owner, John S. Steers, Gen. Mgr., Dry Ridge, Ky.; lately reported to have let contract. (See Machinery Wanted—Plumbing Supplies and Kitchen Equipment.)

Tex., Austin.—Ernest Nalle will soon let contract to erect \$500,000 hotel in 400 block Commerce St.; completion in 6 mos. (H. A. Wroe previously noted interested.)

Va., Hopewell.—Frank Walcott, Propr. of Walcott Hotel, Colonial Beach, Va., will erect hotel.

Va., Norfolk.—Lowenburg Corp. and C. W. Grandy has plans by Harvey Abrames, Norfolk, to alter Neddo Hotel; will redecorate building, install plumbing and heating, including battery of boilers, install tile in

bathrooms, lighting fixtures, gravel roof, etc.; cost \$16,000.

MISCELLANEOUS

Ga., Savannah.—Clubhouse.—Savannah Golf Club will erect clubhouse; main building 105x45 ft.; 3 stories; dance hall 36x60 ft.; brick; stone trim; tile roof; vapor vacuum heating system; shower baths; 500 lockers; tennis court; pergola; cost \$37,000; Henrik Wallin, Archt., Savannah.

Ga., Savannah.—Motordome.—Savannah Motorcycle Club will have plans prepared by Henrik Wallin, Savannah, for motordome; 1½ mi. course; parabolic curves; possibly concrete construction.

La., Shreveport.—Fair.—Shreveport Fair Assn. contemplates erecting \$50,000 building.

Md., Bowie.—Clubhouse.—Southern Maryland Agricultural Fair Assn., 102 E. Lexington St., Baltimore, is reported to erect clubhouse at Bowie race track; also enlarge grandstand; cost about \$16,000.

Miss., Gulfport.—Exposition.—City Commrs. authorized \$125,000 bond issue to purchase site for Mississippi Centennial Exposition, erect buildings, etc.

Okla., Drumright.—Barn, etc.—Gunsburg & Foreman will rebuild barn, toolhouse, offices and 2 residences reported damaged by fire.

Okla., Sand Springs.—Home.—Sand Springs Home has plans by D. Eichenfeld, Tulsa, Okla., for girls' dormitory; 40x300 ft.; fireproof; tile roof; composition floors; hot-water heat; cost \$35,000; contract let in Jan. Address Sand Springs Home.

Tex., Houston.—Clubhouse.—Highland Bayou Fishing and Hunting Club, L. F. Schweikart, Pres., will erect clubhouse at Highland Bayou.

Tex., Texas City.—Pavilion.—H. L. Woodliff is promoting erection of pleasure pavilion on outer end of passenger pier, foot of 5th Ave.

Va., Pulaski.—Clubhouse.—General Chemical Co. will erect clubhouse for employees; probably brick; swimming-pool, gymnasium, etc.; J. C. Duncan, W. T. Crowder, J. C. Scott and others, Com.

RAILWAY STATIONS, SHEDS, ETC.

Ala., Union Springs.—Birmingham & South-eastern R. R., W. M. Blount, Pres., will erect freight and passenger station to replace structure lately noted damaged by fire.

Tex., Dallas.—Rapid Transit Co., Chas. F. Wallace, Pres., and other companies will erect terminal station and office building to be used by Dallas-Fort Worth, Dallas-Waco, Dallas-Denison and Dallas-Corsicana interurban railway lines; also as offices for Dallas Electric Light & Power Co., Texas Power & Light Co., Southern Traction Co., Texas Traction Co. and Northern Texas Traction Co.; building to be 8 stories, with provision for 3 additional stories; 210x85 ft.; reinforced concrete frame, faced with brick and terra-cotta; concrete platforms from waiting-room to tracks with steel frame overhead coverings; terminal yard will contain 7 tracks arranged in 3 pairs with single track and loading platform between; emergency loop from Lane St. through Jackson and Broadway to Commerce St.; capacity of yard tracks 3 cars each; cost \$1,500,000; construction to begin by Dec. 20; details not definitely settled. Address Mark Lownd, 1017 Commonwealth Bldg., Dallas.

SCHOOLS

Ala., Mobile.—Mobile County School Commissioners will request Board of Revenue & Road Commrs. to call election for Jan. 18 on \$150,000 bonds to erect and equip school buildings in county.

Fla., Fort Pierce.—Special Tax Dist. No. 6 voted \$40,000 bonds to erect school building. Address J. W. Hodge, Fort Pierce.

Fla., Santa Rosa.—Santa Rosa Special School Dist. sold \$10,000 of bonds to erect school building; D. N. Trotman, Secy., Board of Public Instruction, DeFuniak Springs, Fla.

Fla., St. Petersburg.—St. Petersburg School Dist. will probably vote in January or February on \$30,000 school-improvement bonds instead of December as planned. Address Dist. School Trustees.

Ga., Athens.—Georgia State College of Agriculture, Andrew M. Soule, Pres., will erect farm mechanics' building, of which present building will be a wing; completed structure 200x50 ft.; 3 stories; brick for first story; stucco and concrete for others; red tile roof; work to begin within 30 days.

Ga., East Point.—Ira T. Settle, Secy. East Point Lumber Co., receives bids until Dec. 20 to erect 2 graded schools; plans and speci-

fications at office of Edwards & Sayward, Architects, 633 Candler Bldg., Atlanta; Builders' Exchange, Atlanta, and Ira T. Settle, East Point. (Noted in July to have voted \$30,000 school bonds.)

Ga., Tifton.—City contemplates voting on \$100,000 bonds to erect high school building, etc. Address The Mayor. (See Water-works.)

Ky., Grayson.—J. W. Lushy will erect school to replace burned structure lately noted; cement, brick and hollow tile construction; composition roof; wood and cement floor; electric lights. Address owner. (See Machinery Wanted—Building Material.)

La., Morrow.—City voted tax to erect high school. Address School Trustees.

La., Pointe Coupee Parish, Ward 10.—Board of School Directors of Pointe Coupee Parish, New Roads, La., will receive bids to erect 4 schools; plans by Favrot & Livaudais, Title Guarantee Bldg., New Orleans.

Mo., Fulton.—Board of Education of Fulton School Dist., Fulton, Mo., receives bids until Dec. 21 to erect high school; separate bids for heating, plumbing and electric wiring; plans and specifications at office of M. F. Bell, Archt., Fulton.

Okla., Kusa.—City plans to erect high school; cost \$20,000. Address The Mayor.

Tenn., Cleveland.—High School Board of Bradley county, Sam Y. Adecock, Supt., receives bids until Dec. 14 to erect high school; plans and specifications at office of Clarence T. Jones, Archt., Hamilton National Bank Bldg., Chattanooga, Tenn. (Lately noted.)

Tenn., Cleveland.—High School Board receives bids until Dec. 14 to erect high school; brick and wood; tar and gravel roof; steam heat; electric lights; cost about \$25,000; plans and specifications at office of Clarence T. Jones, Archt., Hamilton Natl. Bank Bldg., Chattanooga; Sam Y. Adecock, County Supt., Cleveland. Address Walter J. Kile, Chrmn. (Lately noted.)

Tenn., Nashville.—Board of Education, Verner Tolmie, Pres., opens bids Dec. 10 to erect school at 6th Ave. and Jefferson St.; 3 stories; 150x150 ft.; ordinary construction; composition roof; wood joist floor; cost about \$70,000; steam heat \$10,000; Marr & Holman, Architects, Nashville. (Lately noted.)

Tex., Austin.—School Board will probably open bids in Jan. to erect 2 public schools in Driving Park addition and on Westlin St.

Tex., College Station.—Agricultural and Mechanical College receives bids until Dec. 22, through Dr. W. B. Bizzel, Pres., to erect fireproof dairy barn and hospital; plans and specifications at following places: College Station, department of architecture; Dallas, Builders' Exchange, Scollard Bldg.; Fort Worth, Acme Pressed Brick Co., First National Bank; Galveston, Builders' Exchange, 303 23d St.; Houston, Chamber of Commerce; San Antonio, L. J. Hart, Gunter Hotel; Waco, Builders' Exchange, 608½ Austin Ave. Plans by R. Adelsperger, College Archt., call for hospital building 117x82 ft.; cost about \$40,000; dairy barn 215x35 ft.; cost about \$10,000. Address Department of Architecture, College Station, for further information. (Previously noted.)

W. Va., Wheeling.—Richland School Dist. voted \$5,000 bonds to erect school; 10 rooms; fireproof; cost about \$65,000. Address Dist. Board of Education; J. E. Evans, Secy., 116 19th St. Warwood, Wheeling. (Lately noted under Warwood.)

STORES

Fla., Jacksonville.—O. P. Woodcock will erect 3 brick buildings at College and Cope-land Sts.; cost \$7000.

Fla., Tampa.—Harrison & Black are having plans prepared for store and apartment building. (See Apartment-houses.)

Ky., Elizabethtown.—Horace E. McCullum will rebuild residence and store lately damaged by fire at Cedar Creek; concrete block construction; metal roof.

La., DeRidder.—J. S. Roberts will erect 2 brick store buildings to replace burned structures.

Md., Baltimore.—Fredk. Bauernschmidt, Forrest St. and Harford Ave., purchased site at Holliday and Fayette Sts., 82.3½x54.2 ft.; will erect temporary building; 2 stories; first floor for stores.

Mo., Kansas City.—H. L. Lawin will erect 2-story brick store and flat at 4301 Tracy St.; cost \$4000.

Mo., Kansas City.—A. H. Neves will erect store, theater and apartment building. (See Theater.)

N. C., Raleigh.—F. W. Woolworth Co., New York, will erect 1-story extension; skylight; basement under addition; cost \$8500.

Okl., Tulsa.—C. P. Alexander will not erect store and office building soon. (Reported in Nov.)

S. C., Bamberg.—P. B. Murphy will erect theater and store building. (See Theaters.)

S. C., Sumter.—O'Donnel & Co. will rebuild store recently noted with loss of \$12,000; details undecided.

Tenn., Athens.—R. L. Ledbetter plans to erect store building; concrete block construction.

Tenn., Clarksville.—Robinson & McGill will erect 2 business buildings.

Tex., El Paso.—R. E. McKee secured permit to erect store and dwelling. (See Dwellings.)

Tex., Galveston.—Steve Sgitovich has plans by C. D. Hill & Co., Galveston, for business building at 25th and Mechanic Sts.; 2 or 3 stories. (Previously noted to erect hotel, but plans changed.)

Tex., Runge.—W. J. Hubbard will erect store building; brick.

Tex., Houston.—L. W. Martyr will erect store building at 910 Walker Ave.; 51x128 ft.; cost several thousand dollars.

Va., City Point.—Thos. Temple, County Treas., will erect 3-story store and office building.

Va., Richmond.—P. J. Beattie will erect 2-story brick store and dwelling on Beverly St.; cost \$12,000.

THEATERS

Ala., Gadsden.—V. Bacon and others will erect theater.

D. C., Washington.—Rialto Building Co. reported having preliminary plans for theater prepared by Thos. W. Lamb, 644 8th Ave., New York city; cost about \$150,000.

Ky., Louisville.—Joseph & Joseph prepared plans for theater at 2d and A Sts.; seating capacity 750.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Mo., St. Louis.—Ida Hartmann let contract to E. Hartman, St. Louis, to erect 2-story tenement-house at 3518 Giles St.; cost \$4000.

Va., Norfolk.—Jos. M. Clark let contract to Baker & Brinkley, Norfolk, to erect eight-family apartment-house on Graydon Ave.; rough-texture brick; white glazed terra-cotta trimmings; 60x90 ft.; gravel roof; rift-pine floors; tiled floors and wainscoting in bathrooms; basement under entire building; gas and electric lighting; cost \$28,000; let steam-heating contract at \$1258 to W. N. Thornton; H. W. Simpson, Archt., Norfolk.

Va., Richmond.—Stuart Apartment Corporation Incptd. with \$50,000 capital stock; H. C. Whitehurst, Pres.; Chas. S. Vial, V. P.; Jas. R. Sheppard, Jr., Secy.; let contracts to erect apartment-house at West Ave. and Lombardy St.; 3 stories; fireproof; 12 suites; Isbury & Whitehurst, Archts., Richmond.

ASSOCIATION AND FRATERNAL

Tex., Abilene.—Woodmen of the World, E. M. Overshiner, Chrmn. Building Com., has plans by Winter & Riney, Abilene, and let contract at \$7241 to B. O. Howle, Abilene, to rebuild structure for lodge hall and stores; 50x100 ft.; brick and stone; tar and gravel and tin roofing; concrete floors on first story; upper floors wood; electric wiring and fixtures. (Lately noted.)

Va., Danville.—Riverside and Dan River Cotton Mills let contract to H. A. Osborne & Sons, Danville, to erect Y. M. C. A. building; 2 stories and basement; 170x115 ft.; cost \$40,000; Shattuck & Hussey, Archts., Chicago. (Previously noted.)

BANK AND OFFICE

Ark., Leslie.—People's Bank of Leslie, J. O. Cotton, Pres.; J. N. Bromley, V. P., let contract to erect bank building; 1 story; stone or brick; concrete foundation.

Okl., Osage.—R. F. Mullendorf let contract to W. R. Robinson, Oklahoma City, to erect First State Bank of Osage Bldg.; 1 story; brick; concrete floor; asphalt composition roof; metal ceilings; plate glass; Luxfer prism the transoms; A. H. Mott, Archt., Tulsa, Okla.

S. C., Camden.—Henry Savage let contract to Sellers & Pagett, Columbia, S. C., for bank and office building on DeCalb St.; 46x90 ft.; brick; tile roof; wood floor; steam heat; cost \$25,000; B. W. Mitcham, Archt., Camden.

Md., Baltimore.—S. Raith, 2804 Pennsylvania Ave., will employ Archt. about Dec. 7 for motion-picture theater at 2804 Pennsylvania Ave.; 1 story; 22x120 ft.; capacity 350 to 400 seats; brick; concrete wood-covered floor; steam heat; electric light; cost about \$6000.

Mo., Kansas City.—A. H. Neves, 3635 Paseo, will erect 3-story theater, business and apartment building on Troost Ave.; site 55x132½ feet.

S. C., Bamberg.—P. B. Murphy will erect Thielen Theater on Main St.; brick; 35x75 ft.; later erect addition for soda fountain, etc.

Va., Hopewell.—Village Amusement Co., organized with \$50,000 capital stock; J. M. Luke, Cash., Virginia State Bank, Hopewell, Pres.; L. G. Humphries, City Point, Va., V. P.; Paul Barringer, Secy.-Treas.; will erect moving-picture theater to seat 650.

WAREHOUSES

Ark., Pine Bluff.—Pine Bluff Compress Co. will rebuild 4 acres warehousing sheds at Dorris "B" compress. (Lately noted damaged by fire.)

Ark., Spiro.—J. E. Satter of Satter Bros. Milling & Wholesale Co., Stillwater, Ark., will erect warehouse.

Fla., Miami.—Chaille Candy Co. will erect warehouse and office building on Avenue D.

Fla., Pensacola.—Georgia, Florida & Ala. Ry., R. B. Coleman, Gen. Mgr., Bainbridge, Ga., will build warehouse, probably extending full length of wharf; latter, nearly completed, is 1200x100 ft.

Ga., Augusta.—Inter-State Cotton Oil Co. will rebuild seedhouse lately noted damaged by fire at estimated loss of \$175,000.

Va., City Point.—Old Dominion Steamship Co. (main office Pier 25, North River, New York) purchased site, 40x80 ft., and will erect warehouse.

Tenn., Nashville.—W. W. Dillon & Co. let contract to Southern Seating & Cabinet Co., Jackson, Tenn., to remodel building at 304 Third Ave., North, for offices; mahogany and marble interior finish; Thos. W. Gardner, Archt., Nashville. (Lately noted under Stores.)

W. Va., Huntington.—Verus T. Ritter, Archt. for Miller-Ritter building, let following subcontracts: Steel, Pittsburgh office of Trussed Concrete Steel Co., main office, Youngstown, O.; terra-cotta, Federal Terra-cotta Co., Woodbridge, N. J.; heating and plumbing, Backway Plumbing Co., Huntington; concrete, I. A. Rhodes, Huntington, who has general contract on commission basis; structure to be fireproof; concrete floors with wood top; composition roof; elevators; cost about \$60,000. (Previously noted.)

CHURCHES

Md., Baltimore.—Faith Presbyterian Church let contract to Cowan Building Co., 106 W. Madison St., Baltimore, to erect Sunday-school building at Broadway and Gay Sts.; 3 stories; irregular shape, about 79x71 ft.; stone; semi-fireproof; duck roof; hardwood floor; steam or hot-water heat and electric light reserved; cost \$30,000; Clyde N. Friz, Archt., 1523 Munsey Bldg., Baltimore. (Previously noted.)

CITY AND COUNTY

Tex., Houston.—Jail.—City let contract at \$18,000 to W. L. Pearson & Co. to erect addition to jail, and at \$588 to Barden Electric & Machinery Co. for wiring; both contractors of Houston. (Lately noted.)

Va., Hopewell.—Jail.—Prince George county let contract to erect courthouse and jail. (See Courthouses.)

COURTHOUSES

Ga., Savannah.—Chatham county let contract to F. McKee, Savannah, to alter portion of courthouse at Bull and President Sts. for municipal court; cost about \$50,000; H. W. Witcover, Archt., Savannah. (Lately noted.)

Va., Hopewell.—Prince George county let contract at about \$7000 to E. I. du Pont de Nemours & Co., Hopewell, to erect courthouse and jail; 2 stories and basement.

DWELLINGS

Ala., Florence.—Mrs. Q. B. Staten let contract to H. B. Austin, Florence, to erect dwelling; bungalow type; Jas. G. Gauntt, Archt., Florence.

Ala., Florence.—Col. C. W. Ashcraft let contract to H. B. Austin, Florence, to erect dwelling; 2 stories and basement; stone veneered; Spanish style of architecture; hot-air heat; cost \$5000 to \$5500; Jas. G. Gauntt, Archt., Florence. (See Machinery Wanted—Heating; Roofing.)

Ark., Little Rock.—M. E. Dunaway let contract to S. M. Apple to erect dwelling at 2100 Battery St.; 2 stories; cost \$8000. (Lately noted.)

Ark., Little Rock.—M. E. Dunaway let contract to S. M. Apple, Little Rock, to erect 2-story brick-veneer residence at 2022 Battery St.; cost \$6500.

Ark., Little Rock.—H. F. Weiman let contract to E. D. Bracy to erect dwelling at 25d and Battery Sts.; 2 stories; 50x56 ft.; brick veneer and stucco; tile or slate roof; concrete, hardwood and pine floor; hot-water heat; cost \$10,000; Harry Weston, Archt., 211 Masonic Temple, Little Rock. (Lately noted.)

Ark., Little Rock.—Jas. W. Strawn let contract to D. S. Carete, Little Rock, to erect dwelling at Pulaski Heights; 2 stories; 38x42 ft.; frame; stucco; composition shingle roof; hardwood floor; cost \$3000; Harry Weston, Archt., Little Rock. (Lately noted.)

Fla., Orlando.—Fred H. Rand let contract to Henry Green to erect residence at Osceola and E. Central Ave.; cost \$5500.

Fla., Tampa.—Dr. J. S. Helms let contract to Bates & Hudnall, Tampa, to erect residence on Bay Shore Blvd.; 75x75 ft.; 1 story; brick, tile and concrete; gravel composition roof; tile and wood floors; bungalow type; court in center; cost \$17,000; gas-steam heat, \$500; Fred J. James, Archt., Tampa.

Ga., Atlanta.—Chas. B. Shelton let contract to Kalb & McCauley, Atlanta, to erect dwelling at 17 Oakdale Rd., Druid Hills; 2 stories; frame; shingle roof; furnace heat; Hentz & Reid, Archts., Candler Bldg., Atlanta.

Ga., Atlanta.—Mrs. W. M. Batchelor let contract to J. E. Oxford, Atlanta, to repair structure at 621 Piedmont Ave. damaged by fire; cost \$3475.

Ga., Atlanta.—W. D. Hughes, Trustee, 101 Peoples St., will erect 1-story frame dwelling; cost \$4000; Gude & Co., contractors, Atlanta.

Ga., Atlanta.—A. N. Sharp let contract to erect dwelling at 100 Highland View; 7 rooms; frame; shingle roof; cost \$3000; hot-air heat, \$150; Leila Ross Wilburn, Archt., Peters Bldg., Atlanta. (Lately noted.)

Ga., Atlanta.—Dr. L. O. Bricker let contract to J. H. Estes, 78 E. 9th St., Atlanta, to erect dwelling at 452 St. Charles St.; 66x11 ft.; bungalow type; brick veneer; tile roof; inlaid oak floor; hot-air furnace; electric light; cost \$5000; plans by contractor. Address owner. (Lately noted.)

Ga., Thunderbolt.—Mrs. J. E. Banon let contract to Frank Woolard, Savannah, to erect residence; brick; green slate roof; steam heat; hardwood floors; 2 tiled bathrooms; cost \$10,700.

Md., Baltimore.—Northwest Realty Co. has plans by and let contract to Geo. R. Morris, Gunther Bldg., Baltimore, for 3 cottages—2 on Allendale Ave., the other Chatham Rd.; 2½ stories; 28x25 ft.; frame; slate roofs; cost \$10,500.

Miss., Vicksburg.—Mrs. B. B. Willis let contract to Culphey & Mundy, Vicksburg, to rebuild residence lately noted damaged by fire; metal-shingle roof.

Mo., Joplin.—H. E. Blaine let contract to Dan. R. Sandford, Joplin, to erect dwelling at 226 N. Byers St.; 6 rooms; frame; shingle roof; hardwood floor; cost \$3000; Chas. D. Sudhalter, Archt.

N. C., Winston-Salem.—E. W. Noble let contract to J. L. Crouse, Greensboro, N. C., to erect dwelling on West End Blvd.; 9 rooms; frame; cost \$4500.

S. C., Anderson.—Mrs. J. B. Sanders let contract to W. L. Brissett Lumber Co., Anderson, to erect residence on N. Fant St.; 1 story; 6 rooms; living-room 15x24 ft.; beamed ceiling, panel wainscot and tapestry-brick mantel in dining-room; screened porch 12x42 ft.; exterior walls of shingles; Casey & Fant, Archts., Anderson.

S. C., Cameron.—Dr. S. J. Summers let contract to R. L. Antley & Son, Cameron, to erect residence; 2 stories; 34x46 ft.; frame and concrete; gas heat; tin roof; cost about \$4000.

S. C., Greenwood.—T. M. Miller let contract to C. E. Wilkinson to erect residence; frame; 2 stories; cost \$4000; J. E. Summer, Archt., Greenwood.

Tex., El Paso.—L. J. Trotter, 17 Ramon Apts., has plans by and let contract to Perry-Kirkpatrick Co., El Paso, for residence on McKinley Ave.; 5 rooms; brick; shingle roof; hardwood floors; cost \$1250; steam heat, \$275. (Lately noted.)

Tex., Fort Worth.—Dr. W. C. Lackey let contract to Rhodes-Dines Building Co. to erect 1-story brick residence at 2021 College Ave.; cost \$4000.

Va., Charlottesville.—P. H. Faulconer let contract to King Lumber Co., Charlottesville, to erect dwelling 2 mi. west of Charlottesville, on C. & O. road; brick and tile; partly fireproof; cost \$25,000; C. K. Howell, Archt., Charlottesville.

Va., Norfolk.—Dr. R. D. Wolfe let contract to W. J. Atkinson to erect residence at Riverly; bungalow type; brick foundation; 33.10x51.10; shingles and weatherboarding; 6 rooms; slate roof; hot-water heat; wood floors; cost \$4600; Louis R. Moss, Archt., Norfolk. (Noted in Nov.)

GOVERNMENT AND STATE

N. C., Wilkesboro.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, let contract to Richardson Engineering & Constructing Co., Bainbridge, Ga., to erect postoffice; 1 story and basement; 66x55 ft.; fireproof; composition and tin roof; steel beam and concrete floor construction; cost \$53,700. (Noted in Nov.)

Okl., Oklahoma City.—Capitol.—Jas. Stewart & Co., Oklahoma City and New York city, general contractors to erect State Capitol building, let subcontracts as follows: Granite cutting, Baines & Leckie, Denver, Col.; Bedford stone cutting, Shea-Donnelly-Gibson Co., Bedford, Ind.; settling all stone, John McBeath & Son, Chicago, Ill.; interior marble, Vermont Marble Co., Proctor, Vt.; marble floors, Alabama Marble Co., Birmingham, Ala.; plumbing and heating, Andy Binnis, Oklahoma City; sheet-metal work, S. A. Spencer, Salt Lake City; plastering, Smith & McCallen, Denver, Col.; ornamental iron, Herzog Iron Wks., St. Paul, Minn.; metal doors and windows, Lehnner Metal Sash & Door Co., Canton, O.; glass, Pittsburgh Plate Glass Co., Pittsburgh; 2 passenger elevators, Otis Elevator Co., New York city; plans by Layton & Smith, Archts., Oklahoma City, call for building 4 stories and basement; 430x150 ft., with wings 55x55 ft.; fireproof; cost \$1,500,000. (Noted in Nov.)

Va., Front Royal.—Fire Station.—Governments let contract to M. F. Normoyle & Sons, Front Royal, to erect fire station at Remount Station; 1 story; 25x50 ft.; hose tower; hollow tile and stucco; tile roof; cement floor; cost \$4000. (Lately noted.)

HOSPITALS, SANITARIUMS, ETC.

Tex., Waco.—Comms. let contract to Harris & Hewett to erect hospital for contagious diseases; cement and tile; iron roof; cement floors; gas heating; cost \$5000; S. P. Herbert, Archt., Waco.

HOTELS

Ga., Columbus.—Charles Loidans, Atlanta, Ga., and others have plans by and let contract to Southern Ferro-Concrete Co., Trust Company of Georgia Bldg., Atlanta, to erect addition to Hotel Ralston; 3 stories; reinforced concrete; 6 additional stories to be erected later; initial cost \$25,000. (Lately noted.)

W. Va., Berkeley Springs.—Alexander McNeil, Berkeley Springs, representative, let contract to erect hotel on Washington St.; 75 to 100 rooms; steel, concrete and tile construction; tile roof; cement and wood floor; steam heat; city light; cost \$125,000. Address Mr. McNeil. (Previously noted.)

MISCELLANEOUS

Ala., Eufaula.—Clubhouse.—Eufaula Country Club let contract to Mr. Wild to erect clubhouse; frame; shingle roof; partly hardwood floors; city lights; cost about \$2500; Frank Lockwood, Archt., Montgomery, Ala. (Noted in July.)

Fla., Safety Harbor.—Bathhouse.—W. E. Sinclair, Safety Harbor, and D. M. Pipkin, Medilla, Fla., let contract to Mutual Co., St. Petersburg, Fla., to erect bathhouse, etc.; 31x84 ft.; brick; 3-ply felt roof; concrete floor; steam heat; electric light; cement walk; cost \$6000; Lester Avery, Archt., Clearwater, Fla. (Lately noted.)

Fla., Tampa.—Fair.—South Florida Fair and Gasparillo Carnival Assn. let contract to erect fair building at Plant Park; 50x50 ft.; brick; composition roof; concrete floor; electric light; cost \$10,000. (Noted in November.)

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Mo. St. Louis—Home.—Memorial Home let contract to Globe Construction Co., 1227 Chemical Bldg., St. Louis, to erect addition to Old People's Home at Grandon and Magnolia Aves.; 4 stories; 82x36 ft.; reinforced concrete; slate roof; cement floor; steam heat from present plant; cost \$27,000; light \$250; Sam C. Black, Archt., 1318 Chemical Bldg., St. Louis. Address contractor. (Lately noted.)

Va. Roanoke — Auditorium. — Virginia Bridge & Iron Co., Roanoke, has contract to furnish structural steel for auditorium to be erected by Roanoke Auditorium Co., and for which C. H. Turner, Roanoke, is general contractor at \$41,275; 1 story and basement; 100x200 ft.; brick walls; steel trusses; asbestos roof; wood and cement floor; conduit electric-lighting system; H. M. Miller, architect, Roanoke. (Noted in October.)

RAILWAY STATIONS, SHEDS, ETC.

Ga. Atlanta.—Atlanta & West Point R. R. let contract to erect warehouse. (See Warehouses.)

SCHOOLS

Fla. Larkins.—Dade County Board of Public Instruction, Miami, Fla., let contract to W. E. Martin to erect school; 4 rooms and auditorium; separate contract for plumbing; cost \$9891; August Geiger, Archt., Miami.

Ga. Coolidge.—City let contract to Hopson Goodloe, American National Bank Bldg., Macon, Ga., to erect school; 2 stories; brick; dome trim; 8 classrooms; auditorium; cost \$600; G. T. Knight, Mayor. (Previously noted.)

La. Anchor.—School Directors of Pointe Oupee Parish, New Roads, La., let contract to E. Morgan & Bro., New Orleans, to erect school; 73x33 ft.; 2 stories; frame; composition shingle roof; pine floor; cost \$5500; Farret & Livaudais, Archts., Title Guarantee Bldg., New Orleans. (Bids previously noted rejected.)

N. C. Greensboro.—City let contract to W. E. Enoch, Greensboro, to erect Ward School on S. Spring St.; 72x65 ft.; terra-cotta and hollow tile; Barrett specification roof; cost \$2,000; steam heat \$900. (Noted in Nov.)

Tenn. Chattanooga.—University of Chattanooga let contract at \$53,100 to T. S. Moody & Co., Chattanooga, to erect library and administration building and liberal arts building, exclusive heating equipment or landscape work; rough-texture Key-James brick; stone trimmings; slow-burning construction; slate roof; W. T. Downing, architect, Grant Bldg., Atlanta, Ga.; Henry O'Brien, Supt. of Construction. (Lately noted.)

Tex. Austin.—School Board let contract to Van Horn-Shaw Construction Co., Fort Worth, to erect high school on Rio Grande St. between 12th and 13th Sts.; 220x150 ft.; reinforced concrete frame; Trus-Con floor and roof construction; brick facing; terra-cotta trim; Barrett specification roofing; vacuum steam heat; conduit wiring; cost \$6,000; Dennis R. Walsh, Archt., Austin. (Noted in November.)

Tex. Greenville.—Wesley College let contract to Sheppard Bros. to erect administration building; reported cost \$59,000; Geo. Lindsay, Archt. (Lately noted.)

Tex. Houston.—City let contract at \$56,000 to Reinhart & Donovan, Oklahoma City, to erect Taylor School; at \$4820 to Warren Co., Houston, for heating; at \$4255 to Barber Plumbing Co. for plumbing; at \$1508 to Barden Electric & Machinery Co., Houston, for clock and bell; Jones & Tabor, Archts.; Maurice J. Sullivan, City Archt.; 230x190 ft.; brick, tile, wood and reinforced concrete; tar and gravel roof; concrete floors; vacuum heating system. (Lately noted.)

Tex. San Antonio.—West Texas Military Academy let contract to Monolithic Engineering Co., San Antonio, to erect gymnasium and construct swimming pool; building 2 stories; 85x30 ft.; reinforced concrete; tar and gravel roof; reinforced concrete floor; cost \$8000; Altee B. Ayres, Archt., Bell Bldg., San Antonio. (Previously noted.)

W. Va. Pennsboro.—Clay Dist. let contract to C. D. Keyser, Bellaire, O., to erect school; 2 stories; brick; Chas. W. Bates, Archt., 701 National Bank Bldg., Wheeling, W. Va. (Noted in Oct.)

STORES

Ala. New Decatur.—W. H. Aycock let contract to Joe Frahn for woodwork and Ben Nelson for brickwork on business building; 2 stories and basement; brick; 75x100 ft.

Fla. Chipley.—W. R. Gainer, Econfin, Fla., let contract to P. E. Langston, Chipley, to erect brick store building. (Lately noted.)

Ga. Albany.—A. C. Knight, Davis-Exchange Bank Bldg., Albany, has contract to erect building to be occupied by S. H. Kress & Co., New York; 2 stories; brick and steel; cost \$10,000.

Ga. Atlanta.—Lowenstein Investment Co. let contract to Mackle Construction Co., Atlanta, to erect store at 291 Peachtree St.; 2 stories and basement; 47x120 ft.; brick; tar and gravel roof; steam heat; cost \$15,000; Hentz & Reid, Archts., Candler Bldg., Atlanta. (Lately noted.)

Ga. Atlanta.—Mrs. W. M. Batchelor let contract to J. E. Oxford, Atlanta, to repair structure at 631-3 Piedmont Ave., damaged by fire.

Okla. Krebs.—Brewen-Kiple Co. let contract to W. E. Vorhos, North McAlester, Okla., to erect store on Main St.; 1 story; 80x50 ft.; brick; plate-glass front; Johns-Manville asbestos roof; cement and cinder floor; exposed electric wiring; cement walk; cost \$7000; Thos. P. Otterson, Archt., Krebs. (Previously noted.)

Okla. Osage.—Dr. F. D. Summers let contract to W. R. Robinson, Oklahoma City, to erect store; 2 stories; brick; asphalt composition roof; concrete floor; metal ceiling; metal setting; plate glass; Luxifer prism tile transoms; A. H. Mott, Archt., Tulsa, Okla.

Tenn. South Pittsburg.—J. A. Sloan & Co. are reported to have let contract to Mr. Brogan, Fayetteville, Tenn., to erect business building; brick; 50x100 ft.; 2 stories; glass front; basement 50x50 ft.; Patton & Dietzen, South Pittsburg, Contrs. for Excavation.

Tex. Abilene.—Woodmen of the World let contract to erect lodge and store building. (See Association and Fraternal.)

Tex. Houston.—Levy Bros. Dry Goods Co. let contract to Central Construction Co., Houston, to erect additional story to 3-story portion of store building; cost \$25,000.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Air Compressors.—Stafford Coal Co., C. C. Moritt, Supt., Baxter, W. Va.—Prices on air compressors.

Air Compressor.—Dixie Good Roads Machinery Co., 338 Market St., Chattanooga, Tenn.—1000 to 1200-ft. steam-driven air compressor; first-class running condition; quote best price.

Aluminum Sulphate.—E. E. Davis, Supt. Water-works, Richmond, Va.—Bids until Dec. 11 to furnish aluminum sulphate, high bascity for water clarification, containing 17 per cent. aluminum oxide, delivered f. o. b. Korah Station, Chesapeake & Ohio Ry., in barrels, at such time and in such quantities as Supt. may require; bidders requested to bid on 1, 2 and 3 years' contract; estimated quantity, 800 tons; further information obtainable from Water Dept.

Blower.—Levering Mfg. Co., Wilmington, N. C.—Blower outfit; new or second-hand.

Blowers.—See Crushing Mills, etc.—Kline O. Varn.

Boiler.—See Electric Plant Equipment.—W. W. Gibson & Son.

Boiler (Marine).—See Crane (Locomotive), etc.—G. A. J. Mallar, 602 Drake Bldg., Easton, Pa.—500 H. P. marine type boiler; 125 lbs. steam; second-hand.

Boiler.—General Utilities & Operating Co., Hibbs Bldg., Washington, D. C.—Second-hand return tubular boiler, complete with breeching and stack, 200 or 250 H. P. rating, for immediate delivery.

Boiler.—See Engine and Boiler.—H. E. Littleton Mines.

Boiler (Low Pressure).—Cementile Roofing Corp., R. C. Cottam, Prest., 502 Dickson Bldg., Norfolk, Va.—Prices on low-pressure steam boiler; also piping.

Boilers (Water Tube).—Stafford Coal Co., C. C. Moritt, Supt., Baxter, W. Va.—Prices on vertical water-tube boilers.

Bottles (Glass).—Dobbs-Fox Mfg. Co., 933 Healey Bldg., Atlanta, Ga.—Correspond-

WAREHOUSES

Ga. Atlanta.—Atlanta & West Point R. R. let contract to R. D. Cole, Atlanta, to erect warehouse; 1 story; brick; 60x200 ft.

Ga. Atlanta.—Atlanta & West Point R. R., C. A. Wickersham, Prest. and Gen. Mgr., let contract to R. D. Cole, Atlanta, to erect 1-story brick warehouse at Milton Ave. and Belt Line.

Ga. Atlanta.—Atlanta Warehouse & Compressing Co., Arthur Tufts, Engr., 551 Candler Annex, progressing with construction cotton warehouse and compressing plant; awarded all contracts; these include steel from Corrugated Bar Co., Buffalo, N. Y., sprinklers from Automatic Sprinkler Co. of America, New York; lighting plant from Ames Iron Works, Oswego, N. Y.; 50-kw. direct-current generator from Western Electric Co., New York; doors from Kinnear Mfg. Co., Columbus, O., etc.; will install cotton compress equipment, capacity 2000 bales per 24 hours and planned for increase to 6000 bales, from Webb Press Co., Minden, La.; all buildings of reinforced concrete fireproof construction; plant site of 40 acres; total estimated expenditure \$1,000,000. (Previously reported organized, planning warehouses and compress, letting contracts, etc.)

Md. Baltimore.—Mergenthaler Co. let contract to Geo. Repp, 316 Stinson St., Baltimore, to erect additional story to warehouse at 116-18 Hollingsworth St.; 40x45 ft.; brick; Fred Thomas, Archt., 135 N. Kenwood St., Baltimore.

N. C. Albemarle.—Morrow Bros. & Heath Co. let contract to L. A. Moody, Albemarle, to erect warehouse.

W. Va. Huntington.—Warehouse Land Co. let contract to A. S. Stone Construction Co. to erect tobacco warehouse at 27th St. and Guyan Ave.; 126x160 ft.; wood frame; iron sides; 3-ply composition roof; concrete floor; cost \$5700. (Lately noted.)

ence with manufacturers of colored glass 2-oz. round bottle, with ground glass stopper to be screwed in the bottle, or to fit easily in bottle, and be held in place by metal screw cap, top of metal cap pressing against top of glass stopper.

Breakwater Construction.—U. S. Engineer Office, Jacksonville, Fla.—Bids until Dec. 31 to repair breakwater, Fort Taylor, Key West, Fla.; information on application.

Brick.—See Concrete Mixers, etc.—City of Florence, S. C.

Bridges (Concrete).—Swain County Highway Commission, Bryson City, N. C.—Bids until Dec. 29 to construct 4 40-ft.-span and 1 300-ft. concrete bridges; plans and specifications obtainable from T. M. Howerton, Engr., Bryson City, for \$5.

Broom Machinery.—Abner Armstrong, Valden, Miss.—Prices on broom machinery.

Bucket (Cinn Shell).—See Crane, etc. Birmingham Rail & Locomotive Co.

Building Material.—J. W. Lusby, Grayson, Ky.—Prices on cement, brick, hollow tile, etc., for school building.

Building Materials and Construction.—Chas. T. Willis, Inc., 286 5th Ave., New York.—Subbids on materials and construction Rockefeller Institute for Medical Research at Princeton, N. J.

Building Plans.—Tri-County Building Corp., E. H. Patterson, Secy., Petersburg, Va.—Books of plans and illustrations detached dwellings costing \$1500 to \$4000 each; also data on retail drawings and specifications.

Calcium Carbide.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 20,000 lbs. calcium carbide, schedule 9069, delivery Charleston, S. C.

Canal Extension.—Directors Cameron County, Irrigation Dist. No. 1, Harlingen, Tex.—Bids until Dec. 30 to extend various canals and laterals, aggregating 411,900 cu. yds.; also to construct concrete siphon

under main canal where Harlingen ditch crosses same, to be 80 ft. long and contain about 30 cu. yds. concrete; bids for entire work or any part thereof; plans and specifications on file at office of Dist. in Harlingen.

Cans (Tin).—R. M. Burt, care Hastings Development Co., Hastings, Fla.—Addresses of manufacturers of tin cans suitable for paints.

Cars.—American Metallic Packing Co., Lexington, Ky.—10 to 15 standard gauge 60,000-lb. capacity flat cars with steel sills and trucks, air brakes and couplers; first-class second-hand equipment; give full description with best cash price.

Cars (Mine).—Stafford Coal Co., C. C. Moritt, Supt., Baxter, W. Va.—Prices on mine cars.

Carts (Road).—See Concrete Mixers, etc.—City of Florence, S. C.

Cement.—See Concrete Mixers, etc.—City of Florence, S. C.

Chair Machinery.—Abner Armstrong, Valden, Miss.—Prices on machinery for manufacturing chairs.

Concrete Blocks.—I. G. Carmack, 36 Charlotte St., St. Augustine, Fla.—Bids on 800 concrete blocks for cottage.

Concrete Mixers, etc.—City of Florence, S. C., J. Newton Johnston, Commr. of Streets.—Prices on concrete mixers, road carts, steel forms for concrete work, brick and cement.

Construction Materials, etc.—Ooltewah Construction & Improvement Co., W. Hall Moss, Mgr., Ooltewah, Tenn.—Interested in general construction materials and supplies.

Cotton.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 600 cones (12,000-yd. cones) sewing cotton, schedule 9072, delivery Charleston, S. C.

Crane (Locomotive).—G. A. J. Mallar, 602 Drake Bldg., Easton, Pa.—Wants 8-wheel 15-ton locomotive crane; second-hand.

Crane, etc.—Birmingham Rail & Locomotive Co., Birmingham, Ala.—10 to 15-ton locomotive crane; to be used with magnet; also clam-shell bucket for same; 8-wheel type crane preferred; Tennessee delivery.

Crucibles.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 200 600-lb. crucibles, schedule 9061, delivery Washington.

Crushing Mills, etc.—Kline O. Varn, Fort Meade, Fla.—Addresses of manufacturers of mills for grinding rock to fine powder; also of fanning and blowing mills; for development of soft phosphate.

Culvert Construction.—Street Committee, S. Cleburne Brown, Chmn., Portsmouth, Va.—Bids at office City Clerk until Dec. 13 to construct concrete box culvert on Dinwiddie St. crossing of Gander Creek; plans and specifications obtainable from City Engr.

Drainage.—Comms. Davidson Creek Drainage Dist. of Iredell County (J. A. Black and others), Mooresville, N. C.—Bids until Dec. 15 at office Zeb V. Tarlington to construct drainage improvements; plans and specifications on file with Clerk of Iredell County Superior Court, Statesville, N. C.

Drainage.—Board Drainage Comms., Union County, Geo. T. Higginson, Jr., Secy., Morgantown, Ky.—Bids at County Clerk's office until Dec. 30 to construct Dennis O'Nan Public Ditch; about 13 mi. open ditch, requiring about 670,000 cu. yds. earth excavation; plans and specifications at offices County Clerk and of Norman R. Orcutt, Ch. Engr., Morgantown, and obtainable from engineer for \$5.

Dredging Machinery.—Sherman & Kennison, S. Sherman, Mgr., Box 462, Sanford, Fla.—Data and prices on dredging machinery; contemplates construction of small dredge to dredge basin (about 15,000 yds. removal) for boat harbor.

Drill (Electric).—M. K. Frank, Frick Bldg., Pittsburgh, Pa.—New or second-hand electric drill to drill steel rails.

Drykiln.—See Woodworking (Heading) Machinery.—Geo. E. Lum.

Drykilns.—Levering Mfg. Co., Wilmington, N. C.—Two drykilns; new or second-hand.

Electric-light Plant.—City of Knoxville, Tenn.—Bids until Dec. 31 to furnish not less than 600 arc lights and light city buildings. Address John E. McMillan, Mayor, or John W. Flenniken, Commr. of Streets.

Electric Plant Equipment.—Mt. Olive Light & Power Co., Dr. W. S. Chandler, Mgr., Mt. Olive, Ky.—Oil engine, alternator, wire, etc.

Electric Plant Equipment.—W. W. Gibson & Son, Mater, Ky.—Prices on 25 K. W., 220-volt, D. C., belted-type generator; single switchboard with circuit breaker for above; 5000 ft. No. 4 weatherproof wire; 3600 ft. No. 4 insulated wire; 35 H. P. steam engine, with 40 H. P. portable boiler.

Electric Plant Equipment.—Branson Light & Power Co., Branson, Mo.—Prices on two 50 K. V. A. generators, one belt-driven, the other direct-connected to turbine; exciters, complete switchboard, and all station appliances; one 4 K. V. A. mazda street series regulator and material for first installation of 25 street series lamps; material for construction of 6 mi. 2300-volt lines, 3-phase, including transformers, etc.

Electric Plant Equipment.—E. C. Daniels, Mayor, Zebulon, N. C.—Prices on 60 H. P. engine, power-house material, transformers, generator direct-connected, street-lighting equipment, switchboard and poles, crossarms, insulators, pins, wire and pole line hardware, etc.; plans by Comstock Electric Co., High Point, N. C.

Electrical Apparatus, etc.—Bureau Voor Handelsinrichtingen, O. K. Onnes, Dir., 16 Oudebrugsteeg, Amsterdam, Holland. Interested (for Dutch firms to represent American manufacturers) in articles of steel, electrical apparatus, lifts, motorcycles, sanitary goods and sewing machines.

Electrical Cable, etc.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 2000 ft. telephone cable, 240, 000 ft. bell wire, 3000 ft. rattail wire for aerials, 6500 ft. single-conductor wire, schedule 9078, and 25,000 ft. telephone wire, schedule 9077, delivery Brooklyn; also 2000 ft. single-conductor cable, schedule 9064, delivery Newport, R. I.

Electrical Machinery, etc.—Christmas Aeroplane Co., 1617 Hobart St. N. W., Washington, D. C.—Various machinery, including direct-connected D. C., 150 K. W. generator unit, steam; electric motor-driven wood-working and metal-working machinery, such as drill presses, lathes, sheet metal presses, anvil machines, metal-cutting shears, etc.

Electrical Supplies.—Ooltewah Construction & Improvement Co., W. Hall Moss, Mgr., Ooltewah, Tenn.—Prices on electrical supplies and equipment.

Elevator (Grain) Construction.—Port Commrs., Ernest M. Loeb, Prest., New Orleans, La.—Bids until Dec. 23 to construct grain elevator with capacity about 1,000,000 bus. grain; reinforced concrete; plant to include marine tower and about 1500 ft. conveyor galleries; \$25,000 (cash or certified check) with each proposal; plans and specifications on file at office Ford, Bacon & Davis, Engrs., 921 Canal St., New Orleans; full sets furnished to prospective bidders on deposit \$100, returnable to bidders submitting proposals; \$80 returnable to bidders not submitting proposals; \$300,000 bond required from contractor.

Elevators.—See Electrical Apparatus, etc.—Bureau Voor Handelsinrichtingen.

Engine (Oil).—See Electric Plant Equipment.—Mt. Olivet Light & Power Co.

Engine.—See Electric Plant Equipment.—W. W. Gibson & Son.

Fan (Exhaust).—See Woodworking (Heading) Machinery.—Geo. E. Lum.

Engine and Boiler.—H. E. Littleton Mines, H. E. Littleton, Mgr., Harrison, Ark. Will need engine and boiler.

Engines (Hoisting).—C. M. C., care Manufacturers Record.—Four double-drum hoisting engines, 50 to 75 H. P. each, in first-class condition and subject to inspection.

Fill.—C. C. Pashby, City Clerk, Memphis, Tenn.—Bids until Dec. 7 for about 10,000 cu. yds. of clay fill across Bayou Gayoso south of North Memphis pumping station; bidders to furnish all materials; specifications and plans on file with City Engr.; Geo. C. Love, Mayor.

Filling.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 8000 cu. yds. filling on site for hangars, Pensacola, Fla., schedule 9060.

Hardware.—Dept. of Justice, Office Supt. of Prisons, Washington, D. C.—Bids until Dec. 30 to furnish and deliver at U. S. Penitentiary, Atlanta, Ga., finishing hardware for bath, laundry and tailor shop building; in accordance with specifications; copies with further information upon application.

Hardware.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on twist drills, schedule 9062, delivery Philadelphia; 2500 lbs. rolled naval brass nuts, schedule 9071; steel nuts, schedule 9068, and steel nuts, schedule 9071, delivery Boston; brass screws, schedule 9068, delivery Brooklyn.

Hosiery, etc.—Carlos A. Moya, Box 871 (Calle de Zarate 442), Lima, Peru.—Correspondence with manufacturers of cotton stockings, cotton textures of any kind, silk neckties and other goods in line of men's and women's furnishings; view to agencies.

Heating.—H. B. Austin, Florence, Ala.—Prices on heating plant for \$5500 dwelling.

Ice-cream Machinery.—V. O. Garrison, Fayetteville, Tenn.—Prices on refrigerating and other equipment for ice-cream factory, 100 to 300 gals. daily capacity, to be located Clarksville, Tenn.

Ice and Refrigerating Machinery.—W. P. Carson, 346 Nicholson St., Winston-Salem, N. C.—Prices on small refrigerating machinery for butcher shop; also equipment for ice plant of 1-ton daily capacity.

Irrigation.—Ward County Irrigation Dist. No. 1, G. W. Dyer, Prest., Barstow, Tex.—Bids until Dec. 20 to construct dams, reservoirs, head gates, sluice gates and other improvements; specifications, profiles and engineer's report on file; information on application.

Laundry Machinery.—E. L. Halladay, Bay Minette, Ala.—Prices on laundry machinery; population 1500.

Locomotive.—Pennsylvania Equipment Co., Philadelphia, Pa.—Second-hand light standard-gauge passenger locomotive.

Locomotive.—F. B. Williams Cypress Co., Patterson, La.—Logging locomotive; 22 to 27 tons on drivers; 6 wheels without pony trucks.

Lumber.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 32,000 ft. North Carolina pine and 16,000 ft. yellow pine, schedule 9063, delivery Washington; redwood and 40,000 ft. 1 and 1½-in. seasoned spruce, schedule 9067, delivery Mare Island, Cal.

Metal-working Machinery.—See Electrical Machinery, etc.—Christmas Aeroplane Co.

Metals.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on medium bar steel and 11,000 lbs. round rivet steel, schedule 9070, delivery Charleston, S. C.; 70,000 lbs. soft sheet steel, schedule 9070, delivery Portsmouth, N. H.

Mills (Fanning and Blowing).—See Crushing Mills, etc.—Kline O. Varn.

Mops (Rope, Floor).—Lion Furniture Co., Columbia, S. C.—Wholesale prices (from manufacturers only) on rope floor mops; gross lots.

Oils (Rosin and Linseed), etc.—R. M. Burt, care Hastings Development Co., Hastings, Fla.—Addresses of manufacturers of rosin oil, linseed oil and pine tar.

Packing (Meat) Equipment.—South-eastern Cattle Co., R. A. Cason, M.D., Secy-Treas.—Opens bids in March on plant to produce green and cured meats and fertilizers.

Paving.—City Council, Florence, S. C.—Bids until Jan. 11 to construct about 4275 sq. yds. street roadway and 2½ mi. 5-ft. concrete sidewalk; bids asked for on plain and reinforced concrete construction and on vitrified brick with concrete base, and with sand and gravel base; specifications obtainable from Commr. of Streets, J. Newton Johnston, for \$5; C. H. Carlisle, City Engr.

Paving.—City of Houston, Tex., Ben Campbell, Mayor.—Bids until Dec. 11 to grade and pave Drennan St. from German to Josephine St., Milby St. from Engelke to German St., Sherman St. from Orline St. east 1680 ft., with 8-in. gravel; specifications and information obtainable from E. E. Sands, City Engr.

Paving.—Commrs. of Public Works, D. B. McKay, Chrmn., Tampa, Fla.—Bids until Dec. 20 to construct 112,650 sq. yds. asphalt block pavement and 3500 sq. yds. concrete pavement; concrete and granite curbing; specifications obtainable from City Engr.; Allen Thomas, City Clerk.

Pipe.—City of Ardmore, Okla.—Val Mullen, Mayor.—Prices on 10-in., 8-in. and 6-in. gas pipe per mile.

Piping.—Cementile Roofing Corp., R. C. Cottam, Prest., 502 Dickson Bldg., Norfolk, Va.—Prices on steam piping. (See Boiler.)

Pump.—Abner Armstrong, Valden, Miss. Prices on pump.

Planer.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on electrically-driven 72-in. stroke planer, schedule 9061, delivery Washington.

Planer.—Geo. J. Adams, 39 South St., Cor. Old Slip, New York.—Second-hand planer, 42x12 in., 12 ft. bed.

Press (Forging).—Pennsylvania Equipment Co., Philadelphia, Pa.—1000-ton hydraulic forging press.

Press (Wheel).—Birmingham Rail & Locomotive Co., Birmingham, Ala.—150 to

350-ton wheel press; to take standard-gauge driving-wheels 60 in. diam. between bars.

Plumbing Supplies and Kitchen Equipment.—Lake View Sanatorium & Hotel Co., John S. Steers, Gen. Mgr., Dry Ridge, Ky.—Prices on plumbing supplies and kitchen equipment.

Printing Machinery.—J. W. Lusby, Grayson, Ky.—Will need rebuilt news press and linotype.

Pulp and Paper Mill.—Frank B. Nihart, Bay Minette, Ala.—Prices on equipment for mechanical pulp paper mill; capacity 10 tons daily; make wallboard and boxboard.

Pumps (Fire Protection).—Wm. G. Davis, Town Secy., Gathersburg, Md.—Prices on double-action barrel pumps, about 2-in. suction and 1-in. discharge, for fire protection.

Refrigerating Machinery.—See Ice-cream Machinery.—V. O. Garrison.

Retaining Wall.—Baltimore (Md.) Board of Awards, City Hall.—Bids until Dec. 8 to construct masonry retaining wall on Ellicott Driveway south of Edmondson Ave.; about 200 cu. yds.; course rubble masonry; contract No. 144-A; specifications obtainable for \$5 at office Commrs. for Opening Streets, John H. Robinette, Prest., City Hall, where plans and profiles are also on file.

Road Construction.—Houston County Board of Revenue, A. C. Crawford, Chrmn., Dothan, Ala.—Bids until Dec. 30 to construct road from Dothan towards Midland City, distance of 7 mi., to dividing line between Houston and Dale counties; plans and specifications furnished by County Engr.

Road Construction.—J. T. McKinney, Supvr., 41 Medical Bldg., Lynchburg, Va.—Bids until Dec. 18 to construct ½ mi. bituminous macadam on Salem turnpike between 5th St. extension and Harvey's store; plans and specifications on file at Clerk's office, Rustburg; at 41 Medical Bldg., Lynchburg, and office of State Highway Com., Richmond; specifications on application.

Road Construction.—Wicomico County Commrs., Salisbury, Md.—Bids until Dec. 14 to construct 1.35 mi. State-aid highway upon or along Brewington's Branch-Hion Rd. between Middle Neck Rd. and Five Points; bids to be made on blank forms obtainable from State Roads Com., Garrett Bldg., Baltimore, Md.; plans can be seen and forms of specification and contract obtained for \$1 at office State Roads Com.; H. M. Clark, Roads Engr., Salisbury.

Road Construction.—Coosa County Commrs., Rockford, Ala.—Bids until Jan. 11 to grade and top-soil Rockford and Kellyton Rd. from near Hislop towards Kellyton for 4½ mi.; J. A. Crawford, Judge of Probate.

Rolls, Roasters and Steam Cookers.—See Wheat and Corn Flake Plant.—Betterway Products Co.

Roofing (Slate).—H. B. Austin, Florence, Ala.—Prices on green slate roofing.

Roofing.—Levering Mfg. Co., Wilmington, N. C.—14,000 sq. ft. fireproof roofing for two-story brick building; new or second-hand.

Sawmill.—W. King Davis, Church Road, Va.—Prices on 35 H. P. boiler, 30 H. P. engine, sawmill, edger, belts, etc.

Sawmill, etc.—Levering Mfg. Co., Wilmington, N. C.—Band mill outfit; steam rigger; steam loader; steam feed attachment; 3 Dowell machines; 1 trimmer; 2 dry kilns; blower equipment; 14,000 sq. ft. fireproof roofing for 2-story brick building; 25 steel frame ribbed glass window sashes; new or second-hand.

Screws (Furniture).—See Tools and Implements.—Fidel Escalera.

Sewer Construction.—City of Houston, Tex., Ben Campbell, Mayor.—Bids until Dec. 11 to construct storm sewer on Lealand Ave. and Andrew St. from Main to Crosby St., storm sewer on Day and Eagle Aves. from West Alabama to San Jacinto St., and Hathaway Ave. storm sewer laterals; separate bids and contracts on each of above; specifications and information obtainable from E. E. Sands, City Engr.

Sewing Machines.—See Electrical Apparatus, etc.—Bureau Voor Handelsinrichtingen.

Shears.—See Electrical Machinery, etc.—Christmas Aeroplane Co.

Stave Machinery.—H. H. Evans, care Royal Insurance Co., Greensboro, Ala.—To correspond with makers of machinery for stave sawing.

Steel Angles and I Beams, etc.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Dec. 22 to furnish steel angles and I beams, steel boiler tubes, steel cable, copper wire, steel

locomotive pilots, manganese-steel wheels, metallic lifeboats, cast-iron pipe fittings, valves, cocks, wash-tray plugs, closet chain pulls, suction-hose strainers, lead bends, force cups, floor drains, brass ferrules, shower heads, pipe hangers, twist drills, water gauges, condenser electric switches, manila tags, pencils, and hypochlorite of lime; blanks and general information relating to this circular (No. 86) may be obtained from this office or offices of assistant purchasing agents, 21 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Steel Articles.—See Electrical Apparatus, etc.—Bureau Voor Handelsinrichtingen.

Steel Forms.—See Concrete Mixers, etc.—City of Florence, S. C.

Street Improvements.—P. G. Sudduth, Mayor, and Board of Aldermen, Starkville, Miss.—Bids until Dec. 15 for following: Removal of about 5285 yds. of earth, placing of 5315 lin. ft. curb and gutter, placing 100 lin. ft. storm sewer, 16 catch-basins and applying of asphaltic binder to 15,900 sq. yds. surface; plans and specifications on file with T. J. Gunn, City Clerk; copies of plans and specifications obtainable from E. C. Thomas, Engr., Nash Bldg., Starkville.

Stokers.—Stafford Coal Co., C. C. Morfit, Supt., Baxter, W. Va.—Prices on stokers.

Sulphur.—F. A. Lankford, Cloverdale, Va.—Names and addresses of sulphur miners.

Tar (Pine).—R. M. Burt, care Hastings Development Co., Hastings, Fla.—Addresses of manufacturers of pine tar. (See Oils (Rosin and Linseed), etc.)

Tanks (Concrete), etc.—City of Houston, Tex., Ben Campbell, Mayor.—Bids at office of City Secy. until Dec. 20 to construct power-house and reinforced concrete tank, pipe lines, etc., at N. Main St. pumping station; specifications and information obtainable from E. E. Sands, City Engr.

Tanks (Oil).—Standard Portland Cement Co., Leeds, Ala.—Prices on oil tanks with measuring devices; for oilhouse.

Thermometers (Clinical), etc.—Aarbye & Lang, Great Northern Hotel, 118 W. 57th St., New York, formerly Frederic Aarbye & Co., Copenhagen B.—Correspondence with manufacturers of following for export to Scandinavia: Clinical thermometers, European style, 1 minute, quantity up to 100 gross per week, 10 per cent. of first delivery to be accompanied by certificate; morphia syringes, 1, 2 and 3 grammes, up to 100 pieces per week; safety pins, of nickle or black glazed steel or brass (steel preferred), packed in 1-gross boxes, quantity up to 20,000 gross per week, sizes 1, 2, 3, 4 and 5 (Nos. 00 and 0 not wanted); spring press studs (snap buttons), of 70 per cent. nickle brass, 7 mm, 9 mm and 11 mm; of 30 per cent. black glazed brass or iron, 25 per cent. 55 per cent. and 20 per cent.; quantities up to 5000 or 10,000 great gross per week; red and white lithographical bronze, up to 500 kilo; machine needles, 50,000 pieces per week. Want "firm offers (contract offers) f. o. b. steamer New York, subject to acceptance within 4 or 5 weeks, and stating time of delivery of goods."

Tile Floor.—Vance Guano Co., Henderson, N. C.—To contract for tile floor in 60x66 ft. office building.

Tools and Implements.—Fidel Escalera, Box 72, Cochabamba, Bolivia.—Correspondence with manufacturers of carpenter's tools and implements, including saws, adzes and measuring implements; also interested in machetes, knives of various kinds, alfalfa-cutting implements, hatchets, picks, nails, furniture screws, etc.

Water-works.—City of Lee's Summit, Mo., T. P. Gunn, Mayor.—Bids opened Dec. 15 on water-works construction; \$46,000 available; new plant; capacity 70,000 gals.; concrete reservoir 50x100x16; plant 25x37 ft.; in-stall motor, oil engine and triplex pump; about 8 mi. pipe; Henrick, Kent & Lowry, 715 Reserve Bank Bldg., Kansas City, Mo., Engrs.

Wharf and Causeway.—Board Port Commrs., Ernest M. Loeb, Prest., New Orleans, La.—Bids until Jan. 5 to construct Dumaine St. crescosot wharf and reinforced concrete causeway with crescosot wood block roadway; alternate bids as follows: Port Commrs. to furnish all crescosot lumber and piling, or bidders furnishing all material and labor; plans and specifications

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on file office of J. Devereaux O'Reilly, Engr., who will supply sets on deposit \$20.

Wheat and Corn-Flake Plant.—Bettorway Products Co., Edgar M. Hayes, Mgr., 1802 India St., San Diego, Cal.—Prices on machinery (including rolls, roasting and steam cooking machinery) for manufacture of wheat and corn-flaked foods; wants bids on complete plant, installed, initial capacity 10,000 to 15,000 packages per 10 hours, plant arranged later for doubling or trebling capacity.

Window Sash.—Levering Mfg. Co., Wilmington, N. C.—25 steel frame ribbed glass window sash; new or second-hand.

Wire (Steel).—Richard Johnson, Clapham & Morris, 24 Lever St., Manchester, Eng.—Quantity of bright crucible steel wire for rope making; breaking strain 150 kilos per sq. millimeter; wire to be packed in coils oiled and burlapped, free; wants low-

est prices and best terms for export delivered, stating earliest delivery date f. o. b. New York.

Woodworking Machinery.—Levering Mfg. Co., Wilmington, N. C.—Trimmer and 3 Dowell machines; new or second-hand.

Wrapping Machines (Tablet).—J. and H. Bates, Rawdon, Eng.—Catalogues and prices on automatic machinery for wrapping tablets.

Woodworking Machinery.—See Electrical Machinery, etc.—Christmas Aeroplane Co.

Woodworking (Heading) Machinery.—Geo. E. Lum Machine & Supply Co., Birmingham, Ala.—Machinery for heading plant, including drag saw, heading saw, heading planer, jointer, turner, press, exhaust fan, and drykiln about 20x100 ft.

Woodworking Machinery.—See Stave Machinery.—H. H. Evans.

RAILROAD CONSTRUCTION

RAILWAYS

Ark., Paris.—Fort Smith, Subiaco & Eastern R. R. Co. has made survey and will endeavor to complete next year its line from Scranton to Dardanelle, Ark., 23 mi. Henry Group of Paris is Prest.

Ark., Sedgwick.—Cache Valley R. R. Co. expects to begin work next spring (if bonds are sold) on its projected line from Thebes, Ill., to Little Rock, Ark., 246 mi. G. W. L. Brown is Asst. to Prest. and Gen. Mgr.

Fla., Darsey.—Construction is well advanced on extension of the Pelham & Havana Railroad from Darsey to Havana, Fla., 5 mi. and is to be finished by Jan. 1. J. M. Wilkinson, Valdosta, Ga., is Prest.

Fla., Kenansville.—South Florida & Gulf Railroad Co. will build next year from Haly to Hunterland, 12 mi., by day labor. C. H. Armstrong is Gen. Mgr.

Fla., Maytown.—Florida East Coast Ry. has let contract to J. M. Cook of Jacksonville to grade extension from Maytown to New Smyrna, 17.35 mi. Bridging and track-laying to be done by company forces. All material on hand. Total cost, approximately \$300,000. Surveys completed. J. H. Wycoff is resident engineer for the construction. E. Ben Carter, St. Augustine, is Ch. Engr.

Fla., Ocala.—Construction of an electric railway from Ocala to Silver Springs, about 1 mi. is projected. Jacob Brown and J. H. Taylor are reported interested.

Ga., Hinesville.—Flemington, Hinesville & Western Railroad Co. proposes to build from Hinesville to Glenville, Ga., 22 mi., but contract has not yet been let, and work may be undertaken in 1916. J. B. Way of Hinesville is Prest. and Gen. Mgr.

Ga., Perry.—Ocala Southern R. R. Co., J. A. J. Henderson, Prest., Ocala, Ga., is reported to have practically completed financial arrangements to construct its projected extension from Perry to Macon, 28 mi., for which survey has been made.

N. C., Greensboro.—Southern Power Co. is reported contemplating construction of an electric railway from Greensboro to Reidsville and Spray, about 30 mi. W. S. Lee, Charlotte, N. C., is Vice-Prest. and Ch. Engr.

Tenn., Benton.—East Tennessee R. R. Co., of the Polk county, capital \$20,000, is chartered at Nashville. Incorporators: F. W. Hoover, Richard Stiles, Henry Crumbliss, Jr., Geo. D. Lancaster and J. A. Longley.

Tenn., Chilhowee.—Southern Railway is reported to have received bids to build 3 mi. line from Chilhowee to site of dams to be built for the Aluminum Co. of America, and contract may be let soon. W. H. Wells, Washington, D. C., is Ch. Engr. of Constr.

Tenn., Cowan.—Nashville, Chattanooga & St. Louis Ry. is reported to have begun construction on new yards at Cowan. Other facilities will also be installed. Hunter McDonald, Nashville, Tenn., is Ch. Engr.

Tenn., Shelbyville.—Nashville, Chattanooga & St. Louis Railway Co. is reported surveying for a 2-mi. spur to Sylvan Mills. H. McDonald, Nashville, Tenn., is Ch. Engr.

Tex., Buena Vista.—Pecos Valley R. R. Assn., V. L. Sullivan, Chrmn., contemplates building gasoline electric interurban railway from a connection with the Kansas City, Mexico & Orient Ry. northwest via Buena Vista for 35 mi. up Pecos Valley.

Tex., Dallas.—Construction of the proposed electric interurban railway terminal station in Dallas is to begin by Dec. 20, according to announcement of Chas. F. Wallace, Prest. Dallas Rapid Transit Co. A loop line and considerable yard trackage will be built. Address Mark Lowd, 1017 Commonwealth Bldg., Dallas.

Tex., Dallas.—J. F. Wallace of Chicago, Const. Engr. employed by the Dallas City Commission to solve the grade crossing problem, has made a report recommending the construction of a belt line railroad around Dallas with interchange and terminal facilities for the joint use of all lines entering the city. Estimated cost of construction \$900,000, as compared with an estimate of about \$5,000,000 to elevate tracks now existing. Address City Commrs.

Tex., Dayton.—Trinity Valley & Northern Railroad proposes an extension from Lumm to Lamb, Tex., 9 mi. A. E. Kerr is Vice-Prest. & Gen. Mgr. at Dayton.

Tex., Jefferson.—Jefferson & Northwestern R. R. has amended charter and abandoned plan to extend to Naples, Tex., substituting provision for an extension of 9 mi. to Kildare on the Texas & Pacific Ry. F. I. Clark is V.-P. and Gen. Mgr. and H. B. Montgomery, Ch. Engr. at Jefferson.

Tex., Houston.—Houston & San Antonio Interurban Electric Railway Co. has completed preliminary surveys for its proposed line via Seguin, Zeul, Gonzales, Schulenberg and Eagle Lake, about 200 mi., and permanent survey is to start about Dec. 15. Ed. Kennedy, Houston, is Prest.

Tex., Marshall.—Marshall & East Texas Railway Co. is reported to have surveyed from Wynnboro to Paris, 60 mi.; also from Elysian Fields to the Sabine River, about 100 mi., this for the contemplated line from Paris to New Orleans in connection with the New Iberia & Northern Railroad. Bryan Snyder, Marshall, Tex., is Vice-Prest. and Gen. Mgr.

Tex., San Angelo.—Kansas City, Mexico & Orient Railway expects to resume work next spring on line from San Angelo to Cristoval, 17 mi. W. S. Trimble is Acting Ch. Engr. at San Angelo.

Tex., Waco.—Southern Traction Co. is reported considering plans to build an extension from Waco to Austin, about 100 mi.; also from Austin to San Antonio, Tex., about 80 mi. R. B. Stichter is Active V.-P., and Luther Dean, Ch. Engr., both at Dallas, Tex.

Tex., Weatherford.—Chicago, Weatherford & Gulf Ry. Co., capital stock \$250,000, is chartered to build a line from Gainesville via Weatherford to Waco, Tex., about 150 mi. Incorporators: W. D. Stratton, Prest.; D. L. Decker, V.-P. and Gen. Mgr.; both of Middletown, N. Y.; H. L. Moseley, V.-P. and Gen. Atty.; G. A. Holland, Treas.; T. E. Erwin, Secy.; Carter Moseley, Barney Holland, J. P. Owens, A. T. Collier and A. H. Russell; all of Weatherford.

Va., Newport News.—Chesapeake & Ohio Ry., it is reported, will spend \$160,000 for new terminal trackage at Newport News, viz.: \$80,000 for a receiving yard and tracks and \$100,000 for a classification yard and tracks. F. I. Cabell, Richmond, Va., is Ch. Engr.

W. Va., Russellville.—Manns Creek & Meadow River Railway Co., capital \$100,000, is chartered to build a line from the Chesapeake & Ohio Ry. on the east side of New River to Russellville, 10 or 15 mi. Incprts.: Harrison B. Smith, Buckner Clay, E. C. Harrison, Arthur B. Hodges and R. S. Spilman, all of Charleston, W. Va.

W. Va., Wellsburg.—Wabash R. R., it is announced, will build a spur from Cross Creek Tunnel; north to Wellsburg, to Follansbee, 3 mi. A. O. Cunningham is Ch. Engr. at St. Louis, Mo.

STREET RAILWAYS

Tex., Dallas.—Northern Texas Traction Co. has accepted ordinance granting franchise for street-railway extension on Jefferson St. E. T. Moore is Gen. Mgr.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Attalla Company Furnishes Marble.

The Etowah Marble and Granite Co. of Attalla, Ala., is furnishing the stone for the Banks Building being erected in that city. This company has been successful in also securing monument work recently.

Supply Company Reorganized.

J. S. Cromer and J. A. West, Jr., have formed a partnership to take over the business of the Tennant Supply Co. of Spartanburg, S. C., which has been conducting a general jobbing business in mill supplies, machine tools, paint and maple flooring. The office of the new concern is located in the Chapman Building in Spartanburg. Mr. Cromer was formerly with the Andrews Loom Reed Harness Works of Spartanburg and Mr. West was with the Tennant Supply Co.

Free Sites Offered Manufacturers.

Alfred Jenkins, secretary of the Tyler County Chamber of Commerce, Sistersville, W. Va., in writing to the Manufacturers Record of the recent organization of that body says: "We wish to call the attention of the Manufacturers Record to the offer we are making in our bid for industries, Sistersville, W. Va., has the largest amount of money on deposit of any city in the United States per capita. Not only do we offer free site, up to thirty acres, on the Ohio River and accessible to the Baltimore & Ohio Railroad, but likewise will guarantee a participation in the capital stock of any legitimate industry that seeks to locate in our city."

Pressed Steel Car Co. Changes.

The Pressed Steel Car Co. of Pittsburgh, Pa., announces the following changes in management, effective December 1: N. S. Reeder elected vice-president, headquarters in New York City; J. B. Rider, vice-president, headquarters in Pittsburgh, to continue in the capacity of general manager in charge of operations; J. F. MacEnulty, formerly general sales manager, second vice-president, headquarters in New York; C. E. Postlethwaite, formerly manager of sales of central district, general sales manager of the Pressed Steel Car Co. and the Western Steel Car and Foundry Co. of Chicago, headquarters in New York; H. P. Hoffstot, assistant sales manager central district, headquarters in Pittsburgh.

Small Generating Outfit.

A small, portable electric-power generating unit, suitable for furnishing light, heat and power to farms, isolated dwellings or small manufacturing operations, has been developed recently by the Westinghouse Electric and Manufacturing Co. of East Pittsburgh, Pa. The outfit consists of a Westinghouse low-voltage generator and control panel and a Hyray Exide storage battery, mounted on skids. Any ordinary means of propulsion may be used for driving the generator. This charges the battery, from which power can be obtained immediately, or in which it may be stored for use at any time. It is claimed that electric current can be produced thus at an economical figure. The outfit ready for use with fully charged battery, exclusive of motive power for the generator, is on sale by the Westinghouse Electric and Manufacturing Co.

Southern Manufacturers Benefited by War Orders.

Indirectly, Anderson (S. C.) is receiving a share of the war orders that are being placed in this country. The Conneross Yarn Mill received a contract in September, which is to last a year, to manufacture asbestos yarns. These yarns are sent North, where they are woven into automobile and auto truck brake linings, the most of which are being sent direct from the weavers to field garages in Europe. The Conneross Yarn Mill is now manufacturing 10,000 pounds of asbestos yarns per week, and after the first of the year will increase the output to 15,000 pounds.

Next year, it is reported, the mill will confine its activities entirely to manufacturing the raw Canadian asbestos into yarn. It is now engaged in manufacturing, in a small way, low-grade cotton into yarn rope, used in mops, but this work will be discontinued as soon as present contracts are finished. The Anderson Machine & Foundry Co. also reports some indirect war orders, they having been received from other Southern concerns that have taken important foreign contracts.

TRADE LITERATURE

Hyatt Roller Bearings.

A folder has been issued by the Hyatt Roller Bearing Co. of Detroit, Mich., illustrating the wide range of service in which roller bearings are employed. The company calls attention to the fact that Hyatt roller bearings are used on automobiles, motor trucks, automobile starters, farm tractors, line shafts, machine tools, mine cars, electric motors, and, as stated by the folder, "wherever there are wheels that turn."

Handy Conduit Chart.

National Metal Molding Co., manufacturer of electrical conduits and fittings, Pittsburgh, is distributing an attractive wall hanger, reproducing, in one-half actual size, conduit charts as adopted and recommended by the National Electrical Contractors' Association, showing sizes of conduit required by the National Electrical Code for carrying various sizes of conductors. This hanger is printed on linen-backed stock and will prove of convenience for reference in the offices of architects, engineers and electrical contractors. A copy will be furnished upon request.

Lap Trucks.

A folder has been issued by the Saco-Lowell Shops, builders of textile machinery, Lowell, Mass., describing and illustrating its trucks for handling laps from pickers to cards. Two sizes are built, one to hold four laps and the other eight laps, both of which are constructed of hardwood and are well braced with iron where needed. The books provided on the trucks are made double and especially adapted to steel lap rods, but the ordinary wooden lap stick may

(Continued on Page 76.)

FINANCIAL NEWS

FINANCIAL CORPORATIONS

Ala., Union Springs.—A new bank with capital of \$50,000 and surplus of \$5000 is being organized by C. W. Stewart, W. M. Crossley, L. M. Moseley and others.

Ark., Hope.—Citizens' Savings & Trust Co., capital \$50,000, surplus \$5000, began business Dec. 1; R. M. La Grone, Prest.; R. W. Briant, V.-P.; W. P. Agee, Secy.

La., Calhoun.—S. W. Pipes and C. W. Parrell are reported organizing a new bank.

Md., Frederick.—The Central Trust Co. of Maryland has absorbed the Frederick Trust Co. E. L. Coblenz is Prest. of the former company.

N. C., Forest City.—The Farmers' Bank & Trust Co. has taken over the business of the First National Bank, capital being increased to \$75,000 and deposits to \$300,000. J. F. Alexander, Prest.; Dr. G. P. Reid, V.-P.; J. H. Thomas, Cash.; G. C. King, Asst. Cash.

N. C., Hertford.—Farmers' National Bank, capital \$25,000, is organized by H. C. Sullivan, T. S. White, J. J. Fleetwood, R. W. Smith, W. C. Winslow and H. C. Stokes.

N. C., Raleigh.—Home Insurance Agency, 10 W. Hargett St., began business Nov. 15; S. M. Parker, Prest.; H. H. Hutchinson, V.-P. and Gen. Mgr.; R. T. Gowan, Secy. and Treas.

Merchants-Mechanics National Bank

South and Water Sts., BALTIMORE, MD.
DOUGLAS H. THOMAS, President.
JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.
JOHN B. H. DUNN, Cashier.
Capital \$2,000,000. Deposits \$21,670,000.
Surplus and Profits \$2,175,000.
Accounts of Banks, Bankers, Corporations and Individuals solicited.
We invite correspondence.

The National Exchange Bank OF BALTIMORE, MD.

Hopkins Place, German and Liberty Sts.
Capital, \$1,500,000.
March 30, 1915, Surplus and Profits, \$850,000.00.
OFFICERS:
WALDO NEWCOMER, President.
SUMMERFIELD BALDWIN, Vice-Pres.
R. VINTON LANSDALE, Cashier.
C. G. MORGAN, Asst. Cashier.
Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

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The Rookery CHICAGO

First National Bank

RICHMOND, VIRGINIA
Capital and Surplus - - - - - \$3,000,000
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WE BUY BONDS CITY, COUNTY, SCHOOL DISTRICT

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Write us if you have bonds for sale.

The Trend of the Investment Situation

shows that investors are seeking more and more good bonds, as compared with the speculative securities which have been so active. There are, we believe, logical reasons why Mortgage Public Utility Bonds of the best type should receive particular consideration. Let us supply you with some timely investment information and also with some data regarding several Public Utility Bonds of merit.

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United States Depository and Disbursing Agent.

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Surplus and Undivided Profits - - - - - 40,000
A general banking business transacted.
Special attention given to collections.

GUNTER & SAWYERS

BUY School, Electric Light, Water, Sewer, Road, Levee and Drainage Bonds.

LITTLE ROCK, ARK. JACKSONVILLE, FLA.

Okla., Idabel.—Security Farm Loan & Mortgage Co., capital \$10,000, is organized by E. C. Anderson and Geo. F. Short, Idabel, and Stewart Bohannon, Watson.

Okla., Muskogee.—The Mid-Continent Trust Co., capital \$100,000, surplus \$29,000, is organized by H. C. King, Prest.; Dr. J. M. Bolling, 1st V.-P.; Geo. M. Ransom, 2d V.-P. and Treas., and R. W. Reese, Secy.

S. C. Dillon.—First National Bank has made application to organize; capital \$50,000.

Tenn., Knoxville.—A. M. Hill Co. is incorporated with \$5000 capital to do a real estate, rental and insurance business at 317½ West Clinch Ave. M. Hill, Prest.; H. J. Mervin, V.-P.; A. P. Hill, Secy., and S. W. Duggan, Treas.

Tenn., Knoxville.—A Morris-plan bank is being organized with \$50,000 capital. Among those interested are R. S. Hazen, James Maynard, Frank L. Fisher, George L. Price and Ben A. Morton.

Tex., Canyon.—Citizens' National Bank has made application to organize; capital \$25,000.

Tex., New Boston.—City National Bank has made application to organize; capital \$50,000. Organizers: O. H. Proctor, T. P. Trimble, Miss Jennie Tapp, D. A. Chambers and N. B. Eubank.

Tex., San Saba.—City National Bank of San Saba is chartered; capital \$100,000; T. A. Murray, Prest.; R. W. Burleson, Cash. This succeeds the private bank of Ward, Murray & Co.

Va., Basic City.—Basic City Bank Incptd.; capital \$10,000 to \$50,000; C. A. Van Lear, Prest.; W. W. Michael, Secy. and Cash.

Va., Big Stone Gap.—First National Bank is approved; capital \$25,000. Organizers: L. T. Winston, J. A. Gilmer, A. L. Witt, James W. Fox and C. L. Chapman.

Va., Hopewell.—First National Bank is approved; capital \$100,000. Organizers: Littleton Fitzgerald, Jr., Richmond, Va.; O. J. Sands, T. S. Winston, James Mullen and R. H. Bruce.

Va., Hopewell.—National Bank of Hopewell has made application for charter; capital \$100,000. Organizers: Charles E. Plummer, Petersburg; W. E. Armstrong, B. G. Brown, James L. Rosenberg and M. A. Finn, of Hopewell.

Va., Reedville.—Commonwealth National Bank, capital and surplus \$50,000, expects to begin business in March with the following officers: H. Gordon Blunder, Prest.; Luther B. Rice, V.-P.; Clifford L. Brussels, Cash.

W. Va., Logan.—Logan Loan & Surety Co. has filed articles of incorporation; capital \$25,000. Incptd.: R. S. White, William Chaffin, W. E. White, George Aldredge and Don Chaffin.

Va., Petersburg.—The Finance Corporation is being organized to promote the du Pont Banking, Trust & Mortgage Co. with authorized capital of \$500,000. H. W. Obenshain will be Prest. The company will also have offices in Roanoke and Hopewell.

NEW SECURITIES

Ala., Mobile.—Resolution has been passed by Board of School Commrs., petitioning Board of Revenue and Road Commrs. to call an election to vote on \$150,000 Mobile county school bonds. S. S. Murphy is Supt. of Schools.

Fla., Bartow.—Farson, Son & Co., Chicago, have been awarded the following bonds: Special School Dist. No. 9, Davenport Special Tax School Dist. No. 28, and \$15,000 6 per cent. 10-year warrants Lakeland and Special Tax School Dist. No. 1. C. A. Parker is Supt. Board Public Instruction.

Fla., Clearwater.—Steps are being taken to call an election to vote on \$16,000 5 per cent. 30-year bonds for purpose of paying outstanding indebtedness bearing 6 per cent. Address The Mayor.

Fla., De Funiak Springs.—\$10,000 6 per cent.

Manufacturers and Farm Loans

American manufacturers are making money now. Some of their profits ought to be invested in Farm Loans.

We offer mortgages of the choicest character on farms in Georgia and Alabama. These States are leaders in the great campaign of crop diversification that will revolutionize the South.

It is inevitable that land values will increase from year to year.

THE SOUTHERN MORTGAGE COMPANY
Capital \$300,000 Established 1870
Atlanta, Georgia

20-year \$500 denomination bonds Santarom Special Tax School Dist., Walton county, have been purchased by W. W. Flournoy, De Funiak Springs, at \$10,015.

Fla., Gainesville.—\$21,000 sewer-extension bonds are voted. Christopher Matheson is Mayor.

Fla., Lake Worth.—Bids were received until Dec. 7 for \$20,000 water and \$15,000 electric light 6 per cent. bonds. Award not stated. Address K. L. Hifner, Town Clerk.

Fla., Sanford.—\$200,000 refunding and \$50,000 road, Seminole county, bonds voted last Sept. have been validated by the Circuit Court. It is stated the bonds will be put on sale at the beginning of 1916. L. P. Hagan is Chrmn. County Commrs.

Ga., Coolidge.—Bids will be received at any time for \$15,000 5 per cent. school, water, works and electric-light bonds. Address The Mayor.

Ky., Covington.—Bids will be received until 4 P. M. Dec. 27 for \$165,000 4½ per cent. 5-20-year school-improvement bonds; denominations \$500 and \$1000. Address W. A. Shore, Business Manager Board of Education.

Ky., Hopkinsville.—\$100,000 school bonds recently voted are 5-20-year 5 per cents. F. K. Gost is Mayor.

La., Church Point.—Steps are being taken to hold an election to vote on bonds for electric-light plant and water system. Address The Mayor.

La., Crowley.—Bids will be received until Dec. 14 for \$35,000 electric-light and water bonds. R. J. Boudreaux is City Clerk.

La., Point la Hache.—\$15,000 5 per cent. Plaquemines parish courthouse-completion bonds have been authorized. Address Police Jury.

Miss., Gulfport.—City Commrs. have authorized an issue of \$125,000 in bonds for purchase of site for buildings for the Mississippi Centennial Exposition. Address The Mayor.

Miss., Vicksburg.—\$100,000 railroad shop refunding bonds are voted. Address The Mayor.

Mo., Galena.—\$35,000 Stone county courthouse bonds defeated.

Mo., Joplin.—Bids will be received until 7:30 P. M. Jan. 4 for \$350,000 4½ per cent. 20-year school bonds; dated Jan. 1, 1916. J. A. Becker is Prest. Board of Education.

Mo., Lexington.—\$55,000 Willington and \$19,000 Waverly Dist., Lafayette county, road bonds are voted. Address Dr. J. A. Mann, Presiding Judge.

Mo., Springfield.—Election is to be held Jan. 11 to vote on \$400,000 10-20-year \$1000 denomination electric-light-plant bonds; interest not to exceed 5 per cent.; dated Mch. 1, 1916. T. J. Moore is City Clerk. (Previously noted.)

Mo., Stanberry.—\$4000 sewer bonds are voted. Address Black & Ventch, Kansas City.

Mo., Webster Groves.—Election is to be held in near future, it is reported, to vote on \$25,000 fire department equipment bonds. Address The Mayor.

N. C., Asheville.—Macedonia, Burnam Heights and Mount Carmel school districts, Buncombe county, will vote on \$12,000 high school building bonds. Address Board of Education.

N. C., Durham.—Durham county has arranged to borrow not over \$225,000 at 4½ per cent. from Bolger, Mosser & Willaman of Chicago at their bid of \$600 premium and expenses, the loan to be secured by serial bonds maturing in 17 years. The money is to build a new county courthouse.

N. C., Salisbury.—\$200,000 5 per cent. 40-year water, sewer and street bonds have been purchased by Tillotson & Wolcott Co., Cleveland, at \$209,656 and accrued interest.

N. C., Salisbury.—\$23,000 6 per cent. Withrows Creek Drainage Dist. bonds have been purchased at par by L. O. White, Statesville, N. C., and \$15,000 6 per cent. Second Creek Drainage Dist. bonds at par by Kan & Moon, Salisbury, N. C.

Okla., Claremore.—Townships in Rogers county have voted bonds as follows: Oolagh, \$29,000; Talala, \$20,000; Wister, \$45,000. Address County Commrs.

Okla., Clinton.—\$6000 water-works bonds are voted. Address The Mayor.

Okla., Commerce.—Election to vote on \$40,000 water-works bonds will be held Dec. 23. Address Board Town Trustees.

Okla., Goltry.—Election is to be held Dec. 21 to vote on \$11,000 electric-light and telephone system bonds. Address The Mayor.

Okla., Hallettsville.—Election is to be called to vote on \$50,000 sewer bonds. Address The Mayor.

WHO WILL PAY THE COST OF PREPAREDNESS?

**Vast Sums of Money Needed for National Defense
New Sources of Revenue Considered**

The Sixty-fourth Congress, which convened Dec. 6, will consider the gravest revenue problem since Civil War days.

Hundreds of millions will be asked for the Navy and the Army, additional millions for the Panama Canal and millions to meet deficiencies of revenue from existing sources.

Among new sources mentioned are:

Tax on checks
Tax on inheritances
Tax on munitions of war
Tax on imported coal tar products
Tax on gasoline and other petroleum products
Tax on horse-power of internal combustion engines
Rate of income tax increased and exemptions lowered
Extension of present war tax to new subjects of taxation?
Tariff schedules changed for increasing revenue or limiting imports.

No one can foresee the possible trend of tax legislation. Will Congress, working under tremendous pressure, be able to place the burden equitably? Much depends on the vigilance and co-operation of manufacturers, merchants and consumers—those who will bear the burden of the additional taxes.

To protect your interests, KEEP POSTED! We follow every bill in each branch of Congress, furnish copies of all measures introduced, amended, and enacted into law, and report on the successive stages of each measure from introduction to final disposition. Charges reasonable, based on subjects required.

Full Particulars on Request

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Legislative Department 41 Wall St., New York

Okl., Henryetta.—\$100,000 water-system bonds are voted. Address The Mayor.

Okl., Kusa.—Election is to be called to vote on sewer bonds. Address O. P. Cargile, Secy. Kusa Commercial Club.

S. C., Bowman.—\$5000 6 per cent. 20-year \$50 denomination Dist. No. 65 school refunding bonds have been purchased at par, accrued interest and premium by the Hanchett Bond Co., Chicago.

S. C., Johnson.—Steps are being taken to vote on \$40,000 water-works and sewerage bonds. Address The Mayor.

S. C., Sumter.—\$225,000 5 per cent. street and sidewalk improvement bonds have been awarded the Palmetto National Bank of Columbia, S. C., at \$1807 premium and accrued interest.

Tenn., Athens.—Election will probably be held in McMinn county to vote on \$100,000 road bonds. Address County Comms.

Tenn., Byrdstown.—\$50,000 5 per cent. 40-year Pickett county highway bonds, dated Jan. 1, 1916, have been purchased by Elston, Clifford & Co., Chicago.

Tenn., Chattanooga.—Hamilton County Court has passed a resolution authorizing \$250,000 loan for completion of bridge. Will Cummings is County Judge.

Tenn., Chattanooga.—Bids will be received until noon Dec. 7 for \$369,48 6 per cent. 15-year bonds Sidewalk Dist. No. 2, dated Dec. 1, 1915. J. M. Littleton is Mayor.

Tenn., Dover.—Election is soon to be held in Stewart county to vote on \$200,000 road bonds. Address County Comms.

Tenn., Knoxville.—\$27,000 5 per cent. 5-year paving bonds will soon be offered for sale. Robert P. Williams is Recorder.

Tenn., Maryville.—Bids for \$100,000 Blount county pike bonds will be opened Jan. 5. R. J. McReynolds is Chrmn. Board County Comms.

Tex., Angleton.—At noon Dec. 14 \$80,000 5 per cent. \$1000 denomination Angleton Drainage Dist., Brazoria county, bonds are to be sold. A. R. Rucks is County Judge.

Tex., Austin.—The Attorney-General has approved the following securities: \$70,000 5 per cent. 10-40-year bonds Burleson County

Improvement District No. 1; \$75,000 6 per cent. 40-year bonds San Patricio County Road District No. 3; \$85,000 bonds Ellis County Levee District No. 2.

Tex., Bastrop.—\$50,000 bonds Road Dist. No. 2, Bastrop county, have been purchased by E. L. Twing of San Antonio.

Tex., Belton.—The \$40,000 sewer bonds recently voted have been declared void, and another election will be held Jan. 4. Address The Mayor.

Tex., Canadian.—\$20,000 sewer bonds will probably be issued. Oswald Hudson is Mayor.

Tex., Elgin.—\$11,000 artesian-well bonds have been purchased by a local business man. Address The Mayor.

Tex., Fredericksburg.—Election is to be held in Gillespie county to vote on \$300,000 road bonds. Address County Comms.

Tex., Lancaster.—Bids will be received until Jan. 7 for \$15,000 water and sewer bonds. Address The Mayor.

Tex., Lockhart.—Petitions have been circulated in Caldwell county asking that an election be called to vote on \$50,000 highway bonds. Address County Comms.

Tex., Lufkin.—\$300,000 Lufkin Precinct, Angelina county, road bonds defeated.

Tex., Luling.—City proposes to issue \$50,000 highway bonds. Address The Mayor.

Tex., Sulphur Springs.—Hopkins county is considering question of issuing \$400,000 highway bonds. Address County Comms.

Tex., Tascosa.—\$30,000 Oldham county courthouse and jail bonds are reported voted. Address County Comms.

W. Va., Keyser.—\$8000 5% per cent. sewer bonds were offered Dec. 7. Award not stated. W. C. Pifer is Mayor.

W. Va., Pineville.—\$550,000 5 per cent. 5-30-year Wyoming county road improvement bonds have been sold as follows: Powers & Gerard, Chicago, \$300,000; State of West Virginia, \$250,000.

W. Va., Wheeling.—\$85,000 5 per cent. \$500 denomination Warwood and Richland Dist., Ohio county, school bonds are voted; dated Jan. 1, 1916; maturity Jan. 1, 1950. Address J. E. Evans, Secy., Board of Education, 116 19th St., Warwood, Wheeling, W. Va.

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Denomination, \$500

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Interest Periods, January and July

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Due in 1945. Price, \$104 and interest

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[Continued from Page 71.]

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Globe Metal Shingles.

Metal shingles suitable for residences, churches, schools, railroad depots, garages and verandas and, in fact, for any building with a pitch of three inches or more to the foot, are described and illustrated in a catalogue issued by the Globe Iron Roofing & Corrugating Co. of Cincinnati. Globe metal shingles are made in three different designs, and can be furnished either in painted or galvanized steel. They are constructed with a patented lock joint, which is said to make a strong, rigid fastening without the use of solder. A folder is also issued by the company describing Globe patented lock roofing and cluster shingles. In addition to shingles, the Globe Iron Roofing & Corrugating Co. manufactures a complete line of roofing, siding and formed products, including corrugated galvanized culverts, tanks and sheet metal building material of practically every description.

Climax Geared Locomotives.

Catalogue "H," issued by the Climax Manufacturing Co., Corry, Pa., describes the Climax Patent-geared Locomotive, which is designed for service in lumber operations, coal mines, fire-clay banks, stone quarries and numerous other industrial enterprises. Some of the features claimed for the Climax locomotives are the ability to work on roads constructed of light rails, or where the roadbed is rough or uneven, and the possession of great hill-climbing power. The engines are built to standard and special specifications in upright and horizontal models, with direct and positive drivers, in weights of from 12 to 50 tons, steel or wooden frames. The catalogue contains tables of standard specifications and illustrations of the various types of engines under actual working conditions. Description of loadings cars of any gauge, made by the company, also is contained in Catalogue "H."

Poole Engineering & Machine Co.

One of the recent catalogues of the Poole Engineering & Machine Co. of Baltimore has been prepared with the idea of giving a general survey of its organization, plant and products. The business was founded by

Robert Poole in 1842. In 1851 German Hunt became associated with Mr. Poole, and at that time shops were erected which form the nucleus of the present plant, which covers about 20 acres. Enlargements of the plant are now under way to take care of mounting orders amounting to several millions of dollars. Views showing the interior of the erecting and machine shops, foundry, etc., illustrate the company's facilities for handling gear and machine work of all kinds. The iron foundry is equipped with cupolas for melting, and with cranes for handling castings up to 100,000 pounds in weight, and, although the company specializes in machine-moulded gearing, it is prepared to make miscellaneous castings in loam or green sand of the highest grade charcoal iron, semi-steel or coke irons to specifications. The machine-shops are fully equipped with heavy, modern tools for handling the largest work; a pit lathe capable of swinging 6 feet, a boring mill with capacity up to 22 feet, a 12x12x30 foot planer, a 65-inch x 55-foot lathe, besides gear planers for cutting teeth of the largest size, both bevel and spur. Over 6500 different sizes and varieties of spur gearing, up to 20 feet in diameter, and over 3500 kinds of bevel and miter gearing are included in the list of gears made by the company. Especial attention is given to the manufacture of spur and bevel marine wheels and rawhide gears.

Early in its history the company began the manufacture of looms for cotton and woolen mills. It also manufactures Lester double turbine water-wheels and the Francis type of turbine water-wheel. The company also makes a specialty of power transmission machinery, such as shafting, couplings, pulleys, gears and hangers, for flour and grist mills, cotton and woolen mills, paper and rolling mills, fertilizer plants, cable and electric railroads, etc. Pulleys varying in diameter from 5 inches to 240 inches and from 1 inch to 100 inches face are listed. An ordinance department for the manufacture of ordnance in all its various kinds has recently been added, and is to become a permanent part of the organization. For the filling of the shells manufactured by the company a separate plant is now under construction at Texas, Md., while special machinery for the making of munitions is being installed at both plants. Some of this machinery is of such a nature, it is said, that it had to be manufactured in the company's own shops. The ability of the skilled workmen employed regularly to make this special machinery for the manufacture of ordnance is another evidence of the high quality of workmanship and of the efficiency and capacity of the plant to overcome unusual conditions.

The company maintains a staff of thoroughly competent engineers and draughtsmen, and any unusual machinery manufacturing problems or power transmission difficulties are said to be successfully overcome by the application of the knowledge and experience of the staff. For the successful working of heavy machinery for transmitting power a good design is of the utmost importance, and it is in this particular that the Poole Engineering & Machine Co. claims to excel, because it has that extended experience that is only secured after many years.

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